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1.1 libjpeg 6b

1.1.1 Notifications :

This software is based in part on the work of the Independent JPEG Group.

1.1.2 Available under license :

The Independent JPEG Group's JPEG software

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README for release 6b of 27-Mar-1998

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This distribution contains the sixth public release of the Independent JPEG Group's free JPEG software. You are welcome to redistribute this software and to use it for any purpose, subject to the conditions under LEGAL ISSUES, below.

Serious users of this software (particularly those incorporating it into larger programs) should contact IJG at jpeg-info@uunet.uu.net to be added to our electronic mailing list. Mailing list members are notified of updates and have a chance to participate in technical discussions, etc.

This software is the work of Tom Lane, Philip Gladstone, Jim Boucher, Lee Crocker, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.

IJG is not affiliated with the official ISO JPEG standards committee.

DOCUMENTATION

ROADMAP

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This file contains the following sections:

- OVERVIEW General description of JPEG and the IJG software.
- LEGAL ISSUES Copyright, lack of warranty, terms of distribution.
- REFERENCES Where to learn more about JPEG.
- ARCHIVE LOCATIONS Where to find newer versions of this software.
- RELATED SOFTWARE Other stuff you should get.
- FILE FORMAT WARS Software *not* to get.
- TO DO Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

- install.doc How to configure and install the IJG software.
- usage.doc Usage instructions for cjpeg, djpeg, jpegtran, rdjpgcom, and wrjpgcom.
- *.1 Unix-style man pages for programs (same info as usage.doc).
- wizard.doc Advanced usage instructions for JPEG wizards only.
- change.log Version-to-version change highlights.

Programmer and internal documentation:

- libjpeg.doc How to use the JPEG library in your own programs.
- example.c Sample code for calling the JPEG library.
- structure.doc Overview of the JPEG library's internal structure.
- filelist.doc Road map of IJG files.
- coderrules.doc Coding style rules --- please read if you contribute code.

Please read at least the files install.doc and usage.doc. Useful information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.

OVERVIEW

=====

This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images.

JPEG is intended for compressing "real-world" scenes; line drawings, cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a low-quality image. For more details, see the references, or just experiment with various compression settings.

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. For legal reasons, we are not distributing code for the arithmetic-coding variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

We welcome the use of this software as a component of commercial products. No royalty is required, but we do ask for an acknowledgement in product documentation, as described under LEGAL ISSUES.

LEGAL ISSUES

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2. You can use this software for whatever you want. You don't have to pay us.
3. You may not pretend that you wrote this software. If you use it in a program, you must acknowledge somewhere in your documentation that you've used the IJG code.

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- (3) Permission for use of this software is granted only if the user accepts full responsibility for any undesirable consequences; the authors accept NO LIABILITY for damages of any kind.

These conditions apply to any software derived from or based on the IJG code, not just to the unmodified library. If you use our work, you ought to acknowledge us.

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The Unix configuration script "configure" was produced with GNU Autoconf. It is copyright by the Free Software Foundation but is freely distributable. The same holds for its supporting scripts (config.guess, config.sub, ltconfig, ltmain.sh). Another support script, install-sh, is copyright by M.I.T. but is also freely distributable.

It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.

The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

We are required to state that

"The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated."

REFERENCES

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We

highly recommend reading one or more of these references before trying to understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is Wallace, Gregory K. "The JPEG Still Picture Compression Standard", Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44. (Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PostScript file containing a revised version of Wallace's article is available at <ftp://ftp.uu.net/graphics/jpeg/wallace.ps.gz>. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections and some added material. Note: the Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in "The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C

code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

The best full description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US\$59.95, 638 pp. The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2). This is by far the most complete exposition of JPEG in existence, and we highly recommend it.

The

JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead; it's much cheaper and includes a great deal of useful explanatory material.) In the USA, copies of the standard may be ordered from ANSI Sales at (212) 642-4900, or from Global Engineering Documents at (800) 854-7179. (ANSI doesn't take credit card orders, but Global does.) It's not cheap: as of 1992, ANSI was charging \$95 for Part 1 and \$47 for Part 2, plus 7% shipping/handling. The standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

Some extensions to the original JPEG standard are defined in JPEG Part 3, a newer ISO standard numbered ISO/IEC IS 10918-3 and ITU-T T.84. IJG currently does not support any Part 3 extensions.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, revision 1.02. A copy of the JFIF spec is available from:

Literature Department
C-Cube Microsystems, Inc.
1778 McCarthy Blvd.
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A PostScript version of this document is available by FTP at <ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz>. There is also a plain text version at <ftp://ftp.uu.net/graphics/jpeg/jfif.txt.gz>, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from <ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz>. The JPEG incorporation

scheme

found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from [ftp.sgi.com](ftp://ftp.sgi.com) or from <ftp://ftp.uu.net/graphics/jpeg/>. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note. libtiff is available from <ftp://ftp.sgi.com/graphics/tiff/>.

ARCHIVE LOCATIONS

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The "official" archive site for this software is <ftp.uu.net> (Internet address 192.48.96.9). The most recent released version can always be found there in directory [graphics/jpeg](ftp://ftp.uu.net/graphics/jpeg/). This particular version will be archived as <ftp://ftp.uu.net/graphics/jpeg/jpegsrc.v6b.tar.gz>. If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact help@uunet.uu.net for information on retrieving files that way.

Numerous Internet sites maintain copies of the UUNET files. However, only <ftp.uu.net> is guaranteed to have the latest official version.

You can also obtain this software in DOS-compatible "zip" archive format from the SimTel archives (<ftp://ftp.simtel.net/pub/simtelnet/msdos/graphics/>), or on CompuServe in the Graphics Support forum (GO CIS:GRAPHSUP), library 12 "JPEG Tools". Again, these versions may sometimes lag behind the <ftp.uu.net> release.

The JPEG FAQ (Frequently Asked Questions) article is a useful source of general information about JPEG. It is updated constantly and therefore is not included in this distribution. The FAQ is posted every two weeks to Usenet newsgroups [comp.graphics.misc](news:comp.graphics.misc), [news.answers](news:news.answers), and other groups. It is available on the World Wide Web at <http://www.faqs.org/faqs/jpeg-faq/> and other [news.answers](news:news.answers) archive sites, including the official [news.answers](news:news.answers) archive at [rtfm.mit.edu: ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/](ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/). If you don't have Web or FTP access, send e-mail to mail-server@rtfm.mit.edu with body
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RELATED SOFTWARE

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Numerous viewing and image manipulation programs now support JPEG. (Quite a few of them use this library to do so.) The JPEG FAQ described above lists some of the more popular free and shareware viewers, and tells where to obtain them on Internet.

If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making cjpeg/djpeg considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites,

notably <ftp://wuarchive.wustl.edu/graphics/graphics/packages/NetPBM/>.

Unfortunately PBPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.

A different free JPEG implementation, written by the PVRG group at Stanford, is available from <ftp://havefun.stanford.edu/pub/jpeg/>. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)

FILE FORMAT WARS

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Some JPEG programs produce files that are not compatible with our library. The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read.

(For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.)

The file format we have adopted is called JFIF (see REFERENCES). This format has been agreed to by a number of major commercial JPEG vendors, and it has become the de facto standard. JFIF is a minimal or "low end" representation. We recommend the use of TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) for "high end" applications that need to record a lot of additional data about an image. TIFF/JPEG is fairly new and not yet widely supported, unfortunately.

The upcoming JPEG Part 3 standard defines a file format called SPIFF. SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an official standard rather than an informal one. At this point it is unclear

whether

SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not. (In any case, our decoder will remain capable of reading JFIF indefinitely.)

Various proprietary file formats incorporating JPEG compression also exist. We have little or no sympathy for the existence of these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, open format standards for JPEG files. Don't use a proprietary file format!

TO DO

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The major thrust for v7 will probably be improvement of visual quality. The current method for scaling the quantization tables is known not to be very good at low Q values. We also intend to investigate block boundary smoothing, "poor man's variable quantization", and other means of improving quality-vs-file-size performance without sacrificing compatibility.

In future versions, we are considering supporting some of the upcoming JPEG Part 3 extensions --- principally, variable quantization and the SPIFF file format.

As always, speeding things up is of great interest.

Please send bug reports, offers of help, etc. to jpeg-info@uunet.uu.net.

1.2 javax-inject 1

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Version 2.0, January 2004

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1.4 slf4j 1.6.6

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1.5 commons-configuration 1.8

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1.6 antlr 4.1

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```
* /opt/cola/permits/117146987_1695288958.0418987/0/hppc-0-7-1-sources-jar/com/carrotsearch/hppc/BitUtil.java
*
/opt/cola/permits/117146987_1695288958.0418987/0/hppc-0-7-1-sources-jar/com/carrotsearch/hppc/BitSet.java
* /opt/cola/permits/117146987_1695288958.0418987/0/hppc-0-7-1-sources-
jar/com/carrotsearch/hppc/BitSetIterator.java
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1.10 dbus-glib 0.100-7.el7

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* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/RecordedValuesIterator.java

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoubleRecorder.java

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/ShortCountsHistogram.java

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/EncodableHistogram.java

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/ZigZagEncoding.java

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/HistogramLogReader.java

```
*
 /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoublePercentileIterator.java
```

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoubleHistogramIterationValue.java

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoubleHistogram.java

* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/HistogramIterationValue.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/AllValuesIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoubleLinearIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/Histogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/AbstractHistogram.java
*
/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/ConcurrentHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/Version.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/Recorder.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoubleRecordedValuesIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/LogarithmicIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/HistogramLogProcessor.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/SingleWriterDoubleRecorder.java
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* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoubleAllValuesIterator.java
*
/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/IntCountsHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/SynchronizedDoubleHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/PercentileIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/SingleWriterRecorder.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/ConcurrentDoubleHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/SynchronizedHistogram.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/DoubleLogarithmicIterator.java
* /opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/AbstractHistogramLogReader.java
*
/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/LinearIterator.java
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```
/*
 * package-info.java
 * Written by Gil Tene of Azul Systems, and released to the public domain,
 * as explained at http://creativecommons.org/publicdomain/zero/1.0/
 */
```

Found in path(s):

```
*/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/package-info.java
```

No license file was found, but licenses were detected in source scan.

```
/**
 * Written by Gil Tene of Azul Systems, and released to the public domain,
 * as explained at http://creativecommons.org/publicdomain/zero/1.0/
 *
 * @author Gil Tene
 */
```

```
package org.HdrHistogram;
```

```
final class Version {
    public static final String version="$VERSION$";
    public static final String build_time="$BUILD_TIMES$";
}
```

Found in path(s):

```
*/opt/cola/permits/174180979_1651176763.07/0/hdrhistogram-2-1-9-sources-jar/org/HdrHistogram/Version.java.template
```

1.13 iputils 20160308-10.e17

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1.14 libgrypt 1.5.3-14.el7

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1.15 ncurses 5.9-14.20130511.e17_4

1.15.1 Available under license :

Upstream source <http://invisible-island.net/ncurses/ncurses-examples.html>

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Files: install-sh

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1.16 httpcore-nio 4.4.10

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1.17 gnupg 2.0.22-5.el7_5

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/opt/cola/permits/183657586_1695337116.0137277/0/gnupg2-2-0-22-5-el7-5-x86-64-rpm-tar-gz/gnupg2-2.0.22-5.el7_5.x86_64.rpm: binary file matches

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* /bin/grep

1.18 httpasyncclient 4.1.4

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1.19 failureaccess 1.0.1

1.20 gobject-introspection 1.56.1-1.el7

1.20.1 Available under license :

gobject-introspection has two licenses; one for the typelib library, and one for the tools.

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1.21 gpgme 1.3.2-5.el7

1.21.1 Available under license :

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1.22 grep 2.20-3.el7

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1.23 cracklib 2.9.0-11.el7

1.24 hikaricp-java7 2.4.13

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zip/com/zaxxer/hikari/pool/HikariPool.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/metrics/dropwizard/CodaHaleMetricsTracker.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/metrics/MetricsTracker.java
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/opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/metrics/MetricsTrackerFactory.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/HikariJNDIFactory.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
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* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
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* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
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* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/metrics/prometheus/HikariCPCollector.java
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zip/com/zaxxer/hikari/pool/ProxyCallableStatement.java

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zip/com/zaxxer/hikari/util/UtilityElf.java

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zip/com/zaxxer/hikari/hibernate/HikariConfigurationUtil.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
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zip/com/zaxxer/hikari/HikariDataSource.java
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zip/com/zaxxer/hikari/hibernate/HikariConnectionProvider.java
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zip/com/zaxxer/hikari/HikariPoolMXBean.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/HikariConfigMXBean.java

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zip/com/zaxxer/hikari/HikariConfig.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/util/FastList.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/pool/ProxyLeakTask.java
*
/opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/pool/ProxyResultSet.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/pool/ProxyConnection.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/util/DriverDataSource.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/pool/ProxyFactory.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/util/ConcurrentBag.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-

zip/com/zaxxer/hikari/util/SuspendResumeLock.java
* /opt/cola/permits/203480980_1651176812.86/0/hikaricp-java7-2-4-13-sources-
zip/com/zaxxer/hikari/util/JavassistProxyFactory.java

1.25 javax-ws-rs-api 2.1.1

1.26 j2objc-annotations 1.3

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1.27 commons-beanutils 1.9.4

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1.29 hystrix-core 1.5.12

1.30 commons-digester 1.8.1

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1.31 commons-validator 1.6

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1.32 jopt-simple 5.0.2

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1.34 archaius-core 0.6.6

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1.39 python-chardet 2.2.1-3.el7

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1.40 shadow 4.6-5.el7

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not-a-legal-formal-parameter-tuple.scala:2: error: not a legal formal parameter.
Note: Tuples cannot be directly destructured in method or function parameters.

Either create a single parameter accepting the Tuple2,
or consider a pattern matching anonymous function: `{ case (a, b) => ... }`
val x: ((Int, Int) => Int) = (((a, b)) => a)
^

not-a-legal-formal-parameter-tuple.scala:3: error: not a legal formal parameter.
Note: Tuples cannot be directly destructured in method or function parameters.

Either create a single parameter accepting the Tuple2,
or consider a pattern matching anonymous function: `{ case (param1, param2) => ... }`
val y: ((Int, Int, Int) => Int) = (((a, !)) => a)
^

not-a-legal-formal-parameter-tuple.scala:4: error: not a legal formal parameter.
Note: Tuples cannot be directly destructured in method or function parameters.

Either create a single parameter accepting the
Tuple3,
or consider a pattern matching anonymous function: `{ case (param1, ..., param3) => ... }`
val z: ((Int, Int, Int) => Int) = (((a, NotAPatternVariableName, c)) => a)
^

three errors found

```
{% if site.thisScalaVersion != site.latestScalaVersion %}  
<div class="version-notice">This is the specification of a previous version of Scala. See the <a href="{ {  
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1.48 jna 5.5.0

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1.49 kmod 20-28.el7

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1.51 passwd 0.79-6.el7

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when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
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it
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```

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```
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```

```
<signature of Ty Coon>, 1 April 1989
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1.55 libcap 2.22-11.el7

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1.56 python-urlgrabber 3.10-10.e17

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1.58 pam 1.1.8-23.el7

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1.59 cryptsetup 2.0.3-6.el7

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1.63 feign-core 8.15.1

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Found in path(s):

* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Types.java
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Found in path(s):

* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/SynchronousMethodHandler.java

* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/InvocationHandlerFactory.java

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* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/QueryMap.java

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```
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/codec/Decoder.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/codec/Encoder.java
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```
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/RequestTemplate.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/auth/BasicAuthRequestInterceptor.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/RetryableException.java
```

```

*
/opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/ReflectiveFeign.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/codec/ErrorDecoder.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Logger.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Request.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/codec/EncodeException.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/codec/StringDecoder.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Retryer.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/codec/DecodeException.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Util.java
*
/opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/auth/Base64.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/FeignException.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Client.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/MethodMetadata.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Response.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Feign.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-
jar/feign/RequestInterceptor.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Contract.java
* /opt/ws_local/PERMITS_SQL/1041687624_1590960580.15/0/feign-core-8-15-1-sources-jar/feign/Target.java

```

1.64 feign-jackson 8.15.1

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- * /opt/ws_local/PERMITS_SQL/1041687872_1590954410.55/0/feign-jackson-8-15-1-sources-jar/feign/jackson/JacksonDecoder.java
- * /opt/ws_local/PERMITS_SQL/1041687872_1590954410.55/0/feign-jackson-8-15-1-sources-jar/feign/jackson/JacksonEncoder.java

1.65 guice 4.2.3

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1.66 re2j 1.3

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jar/com/google/re2j/CharClass.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/RE2.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Parser.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Inst.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Regexp.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Machine.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Prog.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-
jar/com/google/re2j/PatternSyntaxException.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-
jar/com/google/re2j/MachineInput.java
*
/opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Unicode.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Utils.java
* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-
jar/com/google/re2j/Compiler.java
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* /opt/ws_local/PERMITS_SQL/1057884735_1592369590.28/0/re2j-1-3-sources-jar/com/google/re2j/Matcher.java
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1.67 error_prone_annotations 2.3.4

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* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/ForOverride.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/Var.java
*
/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/SuppressPackageLocation.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/IncompatibleModifiers.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CompileTimeConstant.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/concurrent/LazyInit.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/RequiredModifiers.java
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* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java

*
/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CheckReturnValue.java
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* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/NoAllocation.java
*
/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/concurrent/LockMethod.java
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* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/DoNotMock.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/CompatibleWith.java
*
/opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/RestrictedApi.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/MustBeClosed.java
* /opt/ws_local/PERMITS_SQL/1059106420_1592475238.99/0/error-prone-annotations-2-3-4-sources-1-jar/com/google/errorprone/annotations/FormatMethod.java
```

1.68 fdisk 2.23.2

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```
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it
under certain conditions; type `show c' for details.
```

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```
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`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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```
size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0
```

```
#1: 32 7648 0x83
#2: 7680 8704 0xa5
#5: 7936 4864 0x7 (freebsd)
#6: 12544 3584 0x7 (freebsd)
```

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
--------	------	-------	-----	--------	----	--------

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux

Create 2st primary partition

1bebf87248e05d6e4e62b749da65d023

bsd.img

Set 2nd partition type

2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

__ts_dev__: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 * 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux
__ts_dev__2		4096	20479	8192	a5	FreeBSD

Create default BSD

2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

```
# start end size fstype [fsize bsize cpg]
c: 4096 20479 16384 unused 0 0
d: 0
   16064 16065 unused 0 0
```

BSD disklabel command (m for help):

Command (m for help):

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

```
# start end size fstype [fsize bsize cpg]
a: 4096 6144 2049 4.2BSD 0 0 0
c: 4096 20479 16384 unused 0 0
d: 0 16064 16065 unused 0 0
```

BSD disklabel command (m for help):

Command (m for help):

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

```
0 unused 5 4.1BSD 9 4.4LFS d boot
1 swap
   6 Eighth Edition a unknown e ADOS
2 Version 6 7 4.2BSD b HPFS f HFS
3 Version 7 8 MS-DOS c ISO-9660 10 AdvFS
4 System V
```

BSD disklable command (m for help):

/*

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1.69 yum-utils 1.1.31-54.el7_8

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```

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```
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```

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1.70 activation 1.1.1

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1.71 t-digest 3.2

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 */
```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/FloatHistogram.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/AVLGroupTree.java
*
/opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/Sort.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/TDigest.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/IntAVLTree.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/Histogram.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/MergingDigest.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/Centroid.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/Simple64.java
* /opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/AbstractTDigest.java
*
/opt/ws_local/PERMITS_SQL/1091220915_1600449900.56/0/t-digest-3-2-sources-1-
jar/com/tdunning/math/stats/AVLTreeDigest.java
```

1.72 jctools-core 3.1.0

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
  <modelVersion>4.0.0</modelVersion>
```

```
  <artifactId>jctools-core</artifactId>
  <groupId>org.jctools</groupId>
  <version>3.1.0</version>
  <name>Java Concurrency Tools Core Library</name>
  <description>Java Concurrency Tools Core Library</description>
  <packaging>bundle</packaging>
```

```
  <dependencies>
    <dependency>
      <groupId>org.hamcrest</groupId>
      <artifactId>hamcrest-all</artifactId>
      <version>${hamcrest.version}</version>
      <scope>test</scope>
    </dependency>
```

```
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>${junit.version}</version>
      <scope>test</scope>
    </dependency>
```

```
    <dependency>
      <groupId>com.google.guava</groupId>
      <artifactId>guava-testlib</artifactId>
      <version>${guava-testlib.version}</version>
      <scope>test</scope>
    </dependency>
  </dependencies>
```

```
  <build>
    <plugins>
      <plugin>
        <groupId>org.apache.maven.plugins</groupId>
        <artifactId>maven-surefire-plugin</artifactId>
        <version>3.0.0-M3</version>
        <configuration>
          <includes>
```

```

    <include>*</include>
  </includes>
</configuration>
</plugin>
<plugin>
  <groupId>org.apache.felix</groupId>
  <artifactId>maven-bundle-plugin</artifactId>
  <version>4.2.1</version>
  <extensions>>true</extensions>
  <configuration>
    <instructions>
      <Import-Package>sun.misc;resolution:=optional</Import-Package>
    </instructions>
  </configuration>
</plugin>
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-source-plugin</artifactId>
  <version>3.2.0</version>
  <executions>
    <execution>
      <id>attach-sources</id>
      <phase>verify</phase>
      <goals>
        <goal>jar-no-fork</goal>
      </goals>
    </execution>
  </executions>
</plugin>
<plugin>
  <groupId>org.apache.maven.plugins</groupId>
  <artifactId>maven-javadoc-plugin</artifactId>
  <version>3.1.1</version>
  <configuration>
    <additionalOptions>
      <additionalOption>-Xdoclint:none</additionalOption>
    </additionalOptions>
    <source>8</source>
  </configuration>
  <executions>
    <execution>
      <id>attach-javadocs</id>
      <goals>
        <goal>jar</goal>
      </goals>
    </execution>
  </executions>
</plugin>

```

```
</plugins>
</build>

<distributionManagement>
  <repository>
    <id>bintray-jctools-jctools</id>
    <name>jctools-jctools</name>
    <url>https://api.bintray.com/maven/jctools/jctools/jctools-core/;publish=1</url>
  </repository>
</distributionManagement>

<url>https://github.com/JCTools</url>
<inceptionYear>2013</inceptionYear>

<licenses>
  <license>
    <name>Apache
License, Version 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
    <distribution>repo</distribution>
  </license>
</licenses>

<scm>
  <url>https://github.com/JCTools/JCTools</url>
  <connection>scm:git:https://github.com/JCTools/JCTools</connection>
  <tag>HEAD</tag>
</scm>

<developers>
  <developer>
    <url>https://github.com/nitsanw</url>
  </developer>
  <developer>
    <url>https://github.com/mjpt777</url>
  </developer>
  <developer>
    <url>https://github.com/RichardWarburton</url>
  </developer>
  <developer>
    <url>https://github.com/kay</url>
  </developer>
  <developer>
    <url>https://github.com/franz1981</url>
  </developer>
</developers>

<prerequisites>
```

```

<maven>3.5.0</maven>
</prerequisites>

<properties>
<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
<java.version>1.6</java.version>
<java.test.version>1.8</java.test.version>

<maven.compiler.source>${java.version}</maven.compiler.source>
<maven.compiler.target>${java.version}</maven.compiler.target>
<maven.compiler.testSource>${java.test.version}</maven.compiler.testSource>
<maven.compiler.testTarget>${java.test.version}</maven.compiler.testTarget>

<hamcrest.version>1.3</hamcrest.version>
<junit.version>4.12</junit.version>
<guava-testlib.version>21.0</guava-testlib.version>
</properties>
</project>

```

Found

in path(s):

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

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/*

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```

Found in path(s):

```

* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/spec/Ordering.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SpSCUnboundedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SpMCAtomicArrayQueue.java
*

```

/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MessagePassingQueueUtil.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/util/UnsafeJvmInfo.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/LinkedQueueAtomicNode.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/SpSCLinkedQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MpscUnboundedXaddArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/spec/Preference.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/MpscAtomicArrayQueue.java
 *
 /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MessagePassingQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/SupportsIterator.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MpmcUnboundedXaddArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MpscGrowableArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/BaseSpSCLinkedAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/AtomicQueueFactory.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MpmcArrayQueue.java
 *
 /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/SpSCAtomicArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/SpSCLinkedAtomicQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/SpmcArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/maps/AbstractEntry.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MpmcUnboundedXaddChunk.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/MpscChunkedArrayQueue.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/maps/NonBlockingHashMapLong.java
 * /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
 jar/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java

```

*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/UnsafeLongArrayAccess.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscBlockingConsumerArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/BaseMpscLinkedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/NonBlockingHashMap.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/BaseMpscLinkedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/MpscGrowableAtomicArrayQueue.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/NonBlockingIdentityHashMap.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/BaseLinkedQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/InternalAPI.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/NonBlockingHashSet.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/Pow2.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/spec/ConcurrentQueueSpec.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SpSCChunkedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/ConcurrentAutoTable.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscUnboundedXaddChunk.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/LinkedQueueNode.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCUnboundedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/PortableJvmInfo.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/ConcurrentCircularArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/maps/NonBlockingSetInt.java
*

```



```

/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SequencedAtomicReferenceArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscLinkedQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/UnsafeRefArrayAccess.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscCompoundQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCChunkedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/AtomicReferenceArrayQueue.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/QueueFactory.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/UnsafeAccess.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/MpscUnboundedArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/SpSCGrowableAtomicArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/IndexedQueueSizeUtil.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/atomic/MpscLinkedAtomicQueue.java
*
/opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/SpSCGrowableArrayQueue.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/util/RangeUtil.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/package-info.java
* /opt/ws_local/PERMITS_SQL/1093815924_1601014602.33/0/jctools-core-3-1-0-sources-
jar/org/jctools/queues/BaseSpSCLinkedArrayQueue.java

```

1.73 Iz4 1.8.3-1.e17

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Version 2, June 1991

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Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

Files: *

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1.74 e2fsprogs 1.42.9-19.el7

1.74.1 Available under license :

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It is part of the main e2fsprogs distribution, which can be found at:

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#

This is a Makefile stub which handles the creation of BSD shared # libraries.

#

In order to use this stub, the following makefile variables must be defined.

#

BSDLIB_VERSION = 1.0

BSDLIB_IMAGE = libce

BSDLIB_MYDIR = et

BSDLIB_INSTALL_DIR = \$(SHLIBDIR)

```

#

all:: image

real-subdirs:: Makefile
@echo " MKDIR pic"
@mkdir -p pic

BSD_LIB = $(BSDLIB_IMAGE).so.$(BSDLIB_VERSION)
BSDLIB_PIC_FLAG = -fpic

image: $(BSD_LIB)

$(BSD_LIB): $(OBJS)
(cd pic; ld -Bshareable -o $(BSD_LIB) $(LDFLAGS_SHLIB) $(OBJS))
$(MV) pic/$(BSD_LIB) .
$(RM) -f ../$(BSD_LIB)
(cd ..; $(LN) $(LINK_BUILD_FLAGS) \
`echo $(my_dir) | sed -e 's;lib/;;' /$(BSD_LIB) $(BSD_LIB))

install-shlibs install:: $(BSD_LIB)
@echo " INSTALL_PROGRAM $(BSDLIB_INSTALL_DIR)/$(BSD_LIB)"
@$(INSTALL_PROGRAM) $(BSD_LIB) \
$(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)
@-$(LDCONFIG)

install-strip: install

install-shlibs-strip:: install-shlibs

uninstall-shlibs uninstall::
$(RM) -f $(DESTDIR)$$(BSDLIB_INSTALL_DIR)/$(BSD_LIB)

clean::
$(RM)
-rf pic
$(RM) -f $(BSD_LIB)
$(RM) -f ../$(BSD_LIB)

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Index: tdbsa/tdb.c

--- tdbsa.orig/tdb.c

+++ tdbsa/tdb.c

@@ -4,11 +4,11 @@ Rev: 23371

Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)

*/

/*

- Unix SMB/CIFS implementation.

+ trivial database library - standalone version

- trivial database library - private includes

-

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Gadi Oxman, August 1995

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```

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```
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```

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<signature of Ty Coon>, 1 April 1989
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Theodore Ts'o

23-June-2007

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```
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That's all there is to it!

This is the Debian GNU/Linux prepackaged version of the EXT2 file system utilities (e2fsck, mke2fs, etc.). The EXT2 utilities were written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from <http://sourceforge.net/projects/e2fsprogs>

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This package was added to the e2fsprogs debian source package by Theodore Ts'o <tytso@mit.edu> on Sat Mar 15 15:33:37 EST 2003

It is part of the main e2fsprogs distribution, which can be found at:

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This package was put together by Yann Dirson <dirson@debian.org>, from sources obtained from a mirror of:
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1.78 sed 4.2.2-7.el7

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1.83 httpcomponents-client 4.5.13

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to

BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

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1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3				
2.1.2	2002	PSF	yes	
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes
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2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes

2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
2.7	2.6	2010	PSF	yes

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1.85 iniparse 0.4

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

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1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2			
2002	PSF	yes		
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes

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```
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```

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```
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```

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<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the

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Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not

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5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.
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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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a)

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

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e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is

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1.89 libdb-utils 5.3.21-25.el7

1.89.1 Available under license :

No license file was found, but licenses were detected in source scan.

/opt/cola/permits/1110807414_1680601714.3027513/0/libdb-5-3-21-25-el7-src-zip/libdb-5.3.21-25.el7.src/libdb-5.3.21-25.el7.src.cpio: binary file matches

Found in path(s):

* /bin/grep

1.90 qrencode-libs 3.4.1-3.el7

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Version 2.1, February 1999

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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Otherwise, if the work is a derivative of the Library, you may distribute the object

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1.97 curl 7.29.0-59.el7_9.1

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=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

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axTLS <http://axtls.sourceforge.net/>

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c-ares <http://daniel.haxx.se/projects/c-ares/license.html>

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

zlib http://www.gzip.org/zlib/zlib_license.html

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

krb4

While nothing in particular says that a Kerberos4 library must use any particular license, the one I've tried and used successfully so far (kth-krb4) is partly Original BSD-licensed with the announcement clause. Some of the code in libcurl that is written to deal with Kerberos4 is Modified BSD-licensed.

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OpenLDAP <http://www.openldap.org/software/release/license.html>

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1.98 guava 30.1-jre

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jar/com/google/common/eventbus/SubscriberRegistry.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/eventbus/Dispatcher.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/MoreObjects.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ListenerCallQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/Quantiles.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/eventbus/Subscriber.java
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jar/com/google/common/util/concurrent/ServiceManagerBridge.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/PatternFilenameFilter.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/GwtFuturesCatchingSpecialization.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/SimpleTimeLimiter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/VisibleForTesting.java
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*/

/*

* This following method is a modified version of one found in

* <http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/src/test/tck/AbstractExecutorServiceTest.java?revision=1.30>

* which contained the following notice:

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*

* Other contributors include Andrew Wright, Jeffrey Hayes, Pat Fisher, Mike Judd.

*/

Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/MoreExecutors.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeySetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredKeyListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AllEqualOrdering.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TransformedListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredEntrySetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedMultisetBridge.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactLinkedHashMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FilteredSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CompactHashMap.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSortedKeySortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableEnumMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/UnmodifiableSortedMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingDeque.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingBlockingDeque.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingDeque.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TransformedIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeTraverser.java

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CompactHashSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DescendingMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/FilteredEntryMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingNavigableSet.java
*
```

```
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeRangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DescendingImmutableSortedSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableAsList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EvictingQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingNavigableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractNavigableMap.java
```

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```

```
*/
```

```
/**
```

```
* Holder for extra methods of {@code Objects} only in web. Intended to be empty for regular
* version.
```

```
*/
```

Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/ExtraObjectsMethodsForWeb.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMapEntry.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MultimapBuilder.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/MoreFiles.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/ImmutableEntry.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Tables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Serialization.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/StandardTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/PeekingIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableBiMap.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMapValues.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Collections2.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMapEntrySet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableCollection.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Table.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EmptyImmutableListMultimap.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CollectPreconditions.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/HashBasedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Platform.java


```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeBasedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/StandardRowSortedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Range.java
```

```
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/UnmodifiableIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableMapKeySet.java
```

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```
*/
```

```
/**
```

```
* Holder for web specializations of methods of { @code Shorts}. Intended to be empty for regular
* version.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/ShortsMethodsForWeb.java
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*/
/*
* This method was rewritten in Java from an intermediate step of the Murmur hash function in
* http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp, which contained the
* following header:
*
* MurmurHash3 was written by Austin Appleby, and is placed in the public domain. The author
* hereby disclaims
copyright to this source code.
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/SmallCharMatcher.java
```

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```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableRangeSet.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/LinearTransformation.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/CharSink.java
```

```
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/LongAddable.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/SmoothRateLimiter.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
```

```

jar/com/google/common/collect/FilteredKeyMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/Parameter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ByteSink.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Closer.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/Stats.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/html/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/PairedStatsAccumulator.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/Element.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/CharSource.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/StatsAccumulator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/MutableTypeToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/SipHashFunction.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/TypeCapture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/LongAddable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ByteSource.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/ChecksumHashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/reflect/Invokable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/RateLimiter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/StandardSystemProperty.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/AbstractByteHasher.java
*

```

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/AbstractInvocationHandler.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/BaseEncoding.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/PairedStats.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LongAddables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableScheduledFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LongAddables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CartesianList.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/FileWriteMode.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/ClassPath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/xml/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableRangeMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ServiceManager.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractBaseGraph.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/BaseGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Traverser.java
*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ClosingFuture.java

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* This method was rewritten in Java from an intermediate step of the Murmur hash function in

* <http://code.google.com/p/smhasher/source/browse/trunk/MurmurHash3.cpp>, which contained the

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*/
/**
* Outer class that exists solely to let us write { @code Partially.GwtIncompatible } instead of plain
* { @code GwtIncompatible }. This is more accurate for { @link Futures#catching }, which is available
* under GWT but with a slightly different signature.
*
* <p>We can't use { @code PartiallyGwtIncompatible } because then the GWT compiler
wouldn't recognize
* it as a { @code GwtIncompatible } annotation. And for { @code Futures.catching }, we need the GWT
* compiler to autostrip the normal server method in order to expose the special, inherited GWT
* version.
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Partially.java
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```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TopKSelector.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/ImmutableGraph.java
```

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/SuccessorsFunction.java
```

```
*
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/MutableNetwork.java
```

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graphs.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/InsecureRecursiveDeleteException.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Graph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/RecursiveDeleteOption.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/PredecessorsFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MutableGraph.java
*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/Network.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LongAdder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/LongAdder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Striped64.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Striped64.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Shorts.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Doubles.java

*

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/CharMatcher.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/FluentIterable.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Chars.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/primitives/Floats.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ListenableFutureTask.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/UnicodeEscaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Bytes.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/MultiReader.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Stopwatch.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Converter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Longs.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/Ints.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/internal/Finalizer.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/net/InetAddresses.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/Escaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/thirdparty/publicsuffix/TrieParser.java
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jar/com/google/common/collect/MinMaxPriorityQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractSequentialIterator.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RowSortedTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingSortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingImmutableCollection.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/UnmodifiableListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SortedMapDifference.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedBytes.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HostSpecifier.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/JdkFutureAdapters.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/SignedBytes.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/annotations/GwtIncompatible.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SparseImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/UrlEscapers.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ReferenceEntry.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMakerInternalMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeResolver.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/Platform.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MapMaker.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Cut.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ByteArrayDataInput.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/SettableFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Callables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Service.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractIdleService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingFluentFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Platform.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/ByteArrayDataOutput.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/html/HtmlEscapers.java
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/ArrayBasedEscaperMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/io/LineProcessor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/xml/XmlEscapers.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingListenableFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/annotations/GwtCompatible.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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jar/com/google/common/escape/ArrayBasedCharEscaper.java
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jar/com/google/common/net/InternetDomainName.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AbstractService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/Splitter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/LocalCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/escape/Escapers.java

```

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 */
/**
 * Not supported. <b>You are attempting to create a map that may contain a non-{@code Comparable}
 * key.</b> Proper calls will resolve to the version in {@code ImmutableSortedMap}, not this dummy
 * version.
 *
 * @throws UnsupportedOperationException always
 * @deprecated <b>Pass a key of type {@code Comparable}
 * to use {@link
 *     ImmutableSortedMap#of(Comparable, Object)}.</b>
 */
```

Found in path(s):

```
*/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java
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 */
/**
```

* Holder for web specializations of methods of { @code Floats }. Intended to be empty for regular
* version.
*/

Found in path(s):

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/FloatsMethodsForWeb.java

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jar/com/google/common/collect/ComputationException.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/DiscreteDomain.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableClassToInstanceMap.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableTable.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableAsList.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ArrayTable.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingTable.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TableCollectors.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableEnumSet.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/RegularImmutableSortedSet.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSortedMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SingletonImmutableTable.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ComparisonChain.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractIndexedListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EmptyImmutableSetMultimap.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Monitor.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/package-
info.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SortedLists.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

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jar/com/google/common/base/PatternCompiler.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/CommonMatcher.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/CommonPattern.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/JdkPattern.java
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jar/com/google/common/graph/MutableValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java
*
*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/MoreCollectors.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ImmutableValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ElementOrder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ValueGraphBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/NetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Comparators.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphConstants.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EdgesConnecting.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedMultiNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EndpointPairIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractValueGraph.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/EndpointPair.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/DirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardMutableNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedNetworkConnections.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardMutableValueGraph.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/UndirectedGraphConnections.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/ForwardingNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MultiEdgesConnecting.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RangeGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/LinkedHashMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ArrayListMultimapGwtSerializationDependencies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardValueGraph.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/DirectedGraphConnections.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardNetwork.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/CollectCollectors.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MapRetrievalCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/DirectedMultiNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/GraphConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractGraphBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/NetworkBuilder.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/MapIteratorCache.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/AbstractDirectedNetworkConnections.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/graph/StandardMutableGraph.java
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* Holder for web specializations of methods of { @code Doubles}. Intended to be empty for regular
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/DoublesMethodsForWeb.java
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* Holder for web specializations of methods of { @code Ints}. Intended to be empty for regular
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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jar/com/google/common/collect/ImmutableSortedAsList.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ImmutableBiMapFauxverideShim.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/graph/package-info.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Predicates.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Function.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Throwables.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/AsyncEventBus.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/Primitives.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableWeakReference.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ExecutionList.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/DeadEvent.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Files.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/package-info.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/package-info.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LineReader.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractFuture.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Predicate.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/package-info.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Preconditions.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableSoftReference.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableReferenceQueue.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Objects.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Charsets.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/Subscribe.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/MultiInputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Flushables.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Supplier.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizableReference.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Interners.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Closeables.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/EventBus.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/FinalizablePhantomReference.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LineBuffer.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Suppliers.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/DirectExecutor.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/HashBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/eventbus/AllowConcurrentEvents.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LittleEndianDataInputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Defaults.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CountingOutputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ListenableFuture.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/AbstractIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Functions.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CountingInputStream.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/LittleEndianDataOutputStream.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/CharStreams.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ByteStreams.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/LittleEndianByteArray.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AsyncCallable.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/FarmHashFingerprint64.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/ReaderInputStream.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/MacHashFunction.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ConsumingQueueIterator.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/InterruptibleTask.java

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jar/com/google/common/graph/IncidentEdgeSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/CompactHashing.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingMapEntry.java
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*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Sets.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multimaps.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/BiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multisets.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingQueue.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingConcurrentMap.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ReverseNaturalOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/NullsFirstOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SingletonImmutableSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/EnumHashBiMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Multiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingListIterator.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Ordering.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/LinkedListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSortedSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ConcurrentHashMultiset.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractSetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/collect/ImmutableList.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/NullsLastOrdering.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ForwardingSet.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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jar/com/google/common/collect/ForwardingSortedMap.java
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jar/com/google/common/collect/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/MutableClassToInstanceMap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/TreeMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/NaturalOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Lists.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/RegularImmutableSet.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ListMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ReverseOrdering.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/SetMultimap.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractMapEntry.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
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jar/com/google/common/collect/ForwardingObject.java
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jar/com/google/common/collect/MapDifference.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EnumBiMap.java
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jar/com/google/common/primitives/ImmutableIntArray.java

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jar/com/google/common/util/concurrent/ForwardingLock.java

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jar/com/google/common/hash/AbstractHashFunction.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/ImmutableLongArray.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/io/Java8Compatibility.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/OverflowAvoidingLockSupport.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/ToDoubleRounder.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/BigDecimalMath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Java8Compatibility.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/IgnoreJRERequirement.java
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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/JdkBackedImmutableSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/ImmutableSupplier.java

*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ExecutionSequencer.java
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*
* As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's
* java.util.HashMap
class.
*/

Found in path(s):
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/Striped.java
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- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableSortedMultiset.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMultisetFauxverideShim.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/GeneralRange.java
- *
- /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ForwardingSortedMultiset.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedIterable.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RangeSet.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/AbstractRangeSet.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/Count.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/SortedIterables.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/ImmutableSortedMultiset.java

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- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/WrappingExecutorService.java
- * /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractScheduledService.java
- *

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/UncheckedExecutionException.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/Weigher.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheStats.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractCompositeHashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Hashing.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/AbstractLoadingCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/package-info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/ForwardingLoadingCache.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/CacheBuilderSpec.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Optional.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/DescendingImmutableSortedMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Ticker.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Present.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedInteger.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Murmur3_32HashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/PrimitiveSink.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/BoundType.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractHasher.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalListeners.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedLong.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/Types.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/reflect/TypeParameter.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularImmutableMultiset.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingExecutorService.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/PairwiseEquivalence.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/CycleDetectingLockFactory.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/TreeRangeSet.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/collect/RegularContiguousSet.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Absent.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalNotification.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/AbstractListeningExecutorService.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Hasher.java

*

/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/ForwardingListeningExecutorService.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/HashCode.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/MediaType.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/AbstractStreamingHasher.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Crc32cHashFunction.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/util/concurrent/Uninterruptibles.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/net/HostAndPort.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/Murmur3_128HashFunction.java

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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/base/Enums.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/math/MathPreconditions.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/hash/MessageDigestHashFunction.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/primitives/UnsignedLongs.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-jar/com/google/common/cache/RemovalListener.java

* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-

jar/com/google/common/util/concurrent/ListeningScheduledExecutorService.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/net/HttpHeaders.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/RemovalCause.java
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info.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/base/FunctionalEquivalence.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/AsyncFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/Cache.java
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jar/com/google/common/hash/BloomFilterStrategies.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/BigIntegerMath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/AbstractCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/ExecutionError.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/IntMath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/HashingOutputStream.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/EmptyContiguousSet.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/DoubleMath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/Funnels.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/CacheLoader.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/AbstractNonStreamingHashFunction.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/Funnel.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/ForwardingCache.java
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/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/Queues.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/LongMath.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/math/DoubleUtils.java

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* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/AbstractSortedMultiset.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/cache/LoadingCache.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/primitives/ParseRequest.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/util/concurrent/FutureCallback.java
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/BloomFilter.java
*
/opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/hash/HashFunction.java
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*/
/**
 * Returns an array containing all of the elements in the specified collection. This method
 * returns the elements in the order they are returned by the collection's iterator. The returned
 * array is "safe" in that no references to it are maintained by the collection. The caller is
 * thus free to modify the returned
array.
*
* <p>This method assumes that the collection size doesn't change while the method is running.
*
* <p>TODO(kevinb): support concurrently modified collections?
*
* @param c the collection for which to return an array of elements
*/
```

Found in path(s):

```
* /opt/cola/permits/1119092615_1608716259.54/0/guava-30-1-jre-sources-1-
jar/com/google/common/collect/ObjectArrays.java
```

1.99 annotations 3.0.0

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Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is

analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

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0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under

copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses

the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally

distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

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original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

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versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each

version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

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END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

Copyright (C) <year>

<name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Library General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Library General Public License for more details.

You should have received a copy of the GNU Library General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary.

Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library `Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

That's all there is to it!

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Version 3, 29 June 2007

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Preamble

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The licenses for most software and other practical works are designed
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the GNU General Public License is intended to guarantee your freedom to
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When we speak of free software, we are referring to
freedom, not
price. Our General Public Licenses are designed to make sure that you
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want it, that you can change the software or use pieces of it in new
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To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

Developers that use the GNU GPL protect your rights with two steps:

- (1)
assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software. For both users' and
authors' sake, the GPL requires that modified versions be marked as

changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without

permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The

"System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally

available free

programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered

by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed;

section 10

makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or

similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated

place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

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```
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1.103 zlib 1.2.8

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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHButton-39be410/DCPATHButton/Classes/DCPATHItemButton.m

* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHButton-39be410/Example-Swift/DCPATHButton/Classes/DCPATHItemButton.m

* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHButton-39be410/DCPATHButton/Classes/DCPATHItemButton.h

* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHButton-39be410/Example/Example/AppDelegate.m

* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPATHButton-39be410/Example/Example/main.m

```
*
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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
DCPathButton-39be410/Example/Example/ViewController.m
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathButton.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
DCPathButton-39be410/Example/Example/ViewController.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
DCPathButton-39be410/Example/Pods/DCPathButton/DCPathButton/Classes/DCPathButton.m
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```
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```

```
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DCPathButton-39be410/Example-Swift/Example-Swift/ViewController.swift
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
DCPathButton-39be410/Example-Swift/Example-Swift-Bridging-Header.h
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
DCPathButton-39be410/Example-Swift/Example-SwiftTests/Example_SwiftTests.swift
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-
DCPathButton-39be410/Example-Swift/Example-Swift/AppDelegate.swift
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```

```
Pod::Spec.new do |s|
```

```
s.name      = "DCPathButton"
s.version   = "2.1.1"
s.summary   = " A beautiful button copy from Path@ "

s.description = <<-DESC
```

DCPathButton is a menu button, design by an famous App Path®.
Since Path® 4.0, it return to use a tab bar instead of a side bar,
and also change the menu button. So I try to implement it and then
the DCPathButton born :)

DESC

```
s.homepage = "https://github.com/Tangdixi/DCPathButton"
```

```
s.license = {  
:type => 'MIT',  
:text => 'The DCPathButton use the MIT license'  
}
```

```
s.author = { "Tangdixi" => "Tangdixi@gmail.com" }
```

```
s.platform = :ios, '7.0'
```

```
s.source = {  
:git => "https://github.com/Tangdixi/DCPathButton.git",  
:tag => "2.1.1"  
}
```

```
s.source_files = 'DCPathButton/Classes/*.{h,m}'
```

```
s.resources = ["DCPathButton/Sounds/*"]
```

```
s.frameworks = 'QuartzCore','AudioToolbox'
```

```
s.requires_arc = true
```

```
end
```

Found in path(s):

```
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/DCPathButton.podspec
```

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```

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```
<label opaque="NO" clipsSubviews="YES" userInteractionEnabled="NO" contentMode="left" horizontalHuggingPriority="251" verticalHuggingPriority="251" text=" Copyright (c) 2015 DC. All rights reserved." textAlignment="center" lineBreakMode="tailTruncation" baselineAdjustment="alignBaselines" minimumFontSize="9" translatesAutoresizingMaskIntoConstraints="NO" id="8ie-xW-0ye">
```

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```
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example-Swift/Example-Swift/Base.lproj/LaunchScreen.xib
```

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```
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```

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```

```
* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/Example/Example/BarButtonItemViewController.m
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* /opt/cola/permits/1125758851_1613553092.69/0/tangdixi-dcpathbutton-2-1-3-0-ge4b13fb-tar-gz/Tangdixi-DCPathButton-39be410/README.md

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```
## Special Recognition ##
```

One of the key reasons we got delayed on the CentOS-6 release was lack of suitable build resources, especially when we had to repeatedly build large chunks of code. Norwood S came forward and worked with me to setup a large build machine, then tune the build process and help improve the overall build, test and validate process we were using. This build machine he donated to the project was about 5 times more capable than the entire buildsystem we had. And he did this out of his own pocket, from his

own time, and has since upgraded the machine as well. It's now a 128GB, 48 core machine, with 4 SSD's and 4 sata disks : but the key metric is that it can build from source, the entire CentOS-7 distro in under 22 hrs.

Having this capability was key in our ability to build, test and deliver CentOS-7 as rapidly as we have been able to.

We'd like to dedicate the CentOS-7 Release to Mr Norwood S, of Phoenix, AZ, USA for his continued support for the project.

Contributors:

The Red Hat developers, without whom CentOS would look very different

Akemi Matsuno-Yagi

Alain Reguera Delgado

Alan Bartlett

Andreas Thienemann

Anssi Johansson

Athmane Madjoudj

Bonnie King

Brian Stinson

Carl Trieloff

Christoph Galuschka

Fabian Arrotin

Jakub Filak

James Moger

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Johnny Hughes Jr

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Manuel Wolfshant

Matej Habrnal

Marcus Moeller

Michael Scherer

Mike McLean

Pablo Sebastian Greco

Pat Riehecky

Ralph Angenendt
Scott Robbins
Stephen John Smoogen
Trevor Hemsley
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```
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-  
jar/rx/internal/operators/OnSubscribeFlatMapSingle.java  
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-  
jar/rx/internal/operators/OnSubscribeFlatMapCompletable.java
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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/producers/SingleDelayedProducer.java

*

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-

jar/rx/internal/producers/SingleProducer.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/producers/ProducerArbiter.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/producers/QueuedValueProducer.java
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*

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*

/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/SingleSubscriber.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/BlockingUtils.java

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*/

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/atomic/SpscLinkedAtomicQueue.java

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/unsafe/SpSCArrayQueue.java

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[core/src/main/java/org/jctools/queues/atomic/BaseLinkedQueue.java](https://github.com/JCTools/JCTools/blob/master/jctools-core/src/main/java/org/jctools/queues/atomic/BaseLinkedQueue.java)

*/

Found in path(s):

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/unsafe/BaseLinkedList.java

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*/

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*/

Found in path(s):

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/atomic/MpscLinkedListAtomicQueue.java

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core/src/main/java/org/jctools/queues/atomic/SpSCUnboundedAtomicArrayQueue.java
 */
```

Found in path(s):

```
*/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
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Found in path(s):

```
*/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Single.java
*/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OnSubscribeCombineLatest.java
```

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This package contains code that relies on sun.misc.Unsafe. Before using it you MUST assert
UnsafeAccess.isUnsafeAvailable() == true

Much of the code in this package comes from or is inspired by the JCTools project:

<https://github.com/JCTools/JCTools>

JCTools has now published artifacts (<https://github.com/JCTools/JCTools/issues/17>) so RxJava could add JCTools as a "shadow" dependency (<https://github.com/ReactiveX/RxJava/issues/1735>).

RxJava has a "zero dependency" policy for the core library, so if we do add it as a dependency, it won't be an externally visible dependency that results in a separate jar.

The license for the JCTools code is <https://github.com/JCTools/JCTools/blob/master/LICENSE>

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-

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jar/rx/internal/operators/OperatorPublish.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorDistinct.java
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jar/rx/internal/schedulers/NewThreadWorker.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/schedulers/ScheduledAction.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorSampleWithObservable.java
*
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jar/rx/internal/operators/OperatorBufferWithTime.java
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jar/rx/internal/operators/OnSubscribeDelaySubscription.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorSkipUntil.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorEagerConcatMap.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OnSubscribeTimerPeriodically.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorBufferWithStartEndObservable.java
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jar/rx/internal/operators/OperatorBufferWithSize.java
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jar/rx/internal/operators/OperatorWithLatestFrom.java
*
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jar/rx/internal/operators/OnSubscribeTimerOnce.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorBufferWithSingleObservable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorDebounceWithTime.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorTakeTimed.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorSwitch.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorRetryWithPredicate.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorSampleWithTime.java
*
/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorWindowWithSize.java
No license file was found, but licenses were detected in source scan.

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*/

Found in path(s):

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorOnBackpressureDrop.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/OnCompletedFailedException.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorSubscribeOn.java
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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Scheduler.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/SerializedSubscriber.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/CompletableOnSubscribeMerge.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Function.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/plugins/RxJavaObservableExecutionHookDefault.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/PublishSubject.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeAutoConnect.java
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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorTakeLast.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observables/ConnectableObservable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorElementAt.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorReplay.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeSingle.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Producer.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorToObservableList.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/RxRingBuffer.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action1.java

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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/BehaviorSubject.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/SubjectSubscriptionManager.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorTimeoutWithSelector.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Notification.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func6.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/schedulers/NewThreadScheduler.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/FuncN.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorDoOnUnsubscribe.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/BlockingOperatorToFuture.java

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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeJoin.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/UnicastSubject.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action8.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/TestObserver.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action3.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Completable.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorOnBackpressureBuffer.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Subscription.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorTakeWhile.java

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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/CompletableOnSubscribeMergeDelayErrorIterable.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorDematerialize.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/BufferUntilSubscriber.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observables/SyncOnSubscribe.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorToObservableSortedList.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func8.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorGroupBy.java

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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/CompletableOnSubscribeMergeIterable.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/UnsubscribeFailedException.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/CompletableOnSubscribeTimeout.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeAmb.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeFromArray.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeGroupJoin.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/NotificationLite.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/CachedThreadScheduler.java
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 /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/BlockingOperatorNext.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/SleepingAction.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/schedulers/TestScheduler.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/TrampolineScheduler.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorTakeLastTimed.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/OnErrorNotImplementedException.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorDoOnRequest.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorAsObservable.java
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 /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subscriptions/SerialSubscription.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/subscriptions/SequentialSubscription.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorMaterialize.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action4.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/SerializedObserver.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorIgnoreElements.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action2.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/EventLoopsScheduler.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/plugins/RxJavaErrorHandler.java

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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorWithLatestFromMany.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Functions.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Observer.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/CachedObservable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorDoOnSubscribe.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorObserveOn.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action6.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func4.java
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jar/rx/schedulers/ImmediateScheduler.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action7.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/BlockingOperatorToIterator.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/observables/GroupedObservable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorTakeUntilPredicate.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorThrottleFirst.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/Subscriber.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorTimeoutBase.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorAll.java
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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Action5.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorTimeInterval.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OnSubscribeDoOnEach.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorMapNotification.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OnSubscribeDefer.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/plugins/RxJavaObservableExecutionHook.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorCast.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorSingle.java
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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/Subject.java
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 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorTimestamp.java
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 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorMerge.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorSkipLastTimed.java
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 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorSkip.java
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 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/NewThreadScheduler.java
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 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/CompletableOnSubscribeMergeDelayErrorArray.java
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 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/BlockingOperatorLatest.java
 * /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/BackpressureDrainManager.java
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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subscriptions/RefCountSubscription.java
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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeMap.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorZipIterable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorZip.java
*

/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/BlockingOperatorMostRecent.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeToObservableFuture.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/ReplaySubject.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func1.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subscriptions/Subscriptions.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorAny.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/SerializedSubject.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/CompositeException.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/ActionN.java
*
/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func0.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/AsyncSubject.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/schedulers/package-info.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorSerialize.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/OnErrorThrowable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/schedulers/Schedulers.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorScan.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/CompletableOnSubscribeConcatIterable.java
*
/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func9.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/SubscriptionList.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/Observers.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeFromIterable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OperatorUnsubscribeOn.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/schedulers/TimeInterval.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func5.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeRange.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/OnErrorFailedException.java
*
/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observables/BlockingObservable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/GenericScheduledExecutorService.java

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func7.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/observers/SafeSubscriber.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Func3.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/operators/OperatorDelay.java
```

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*/
```

Found in path(s):

```
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
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* Original location: https://github.com/JCTools/JCTools/blob/master/jctools-core/src/main/java/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
*/
```

Found in path(s):

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/unsafe/ConcurrentSequencedCircularArrayQueue.java

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*/

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* Original location: <https://github.com/JCTools/JCTools/blob/master/jctools-core/src/main/java/org/jctools/queues/atomic/BaseLinkedAtomicQueue.java>
*/

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/atomic/BaseLinkedAtomicQueue.java

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/CompletableSubscriber.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-

jar/rx/internal/operators/CompletableFromEmitter.java

*

/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/CompletableEmitter.java

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[core/src/main/java/org/jctools/queues/MpscLinkedQueue.java](https://github.com/JCTools/JCTools/blob/master/jctools-core/src/main/java/org/jctools/queues/MpscLinkedQueue.java)

*/

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeOnAssemblyCompletable.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/subscriptions/Unsubscribed.java

*

/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/ActionNotificationObserver.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/BackpressureOverflow.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/SafeCompletableSubscriber.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/package-info.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeCreate.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/EmptyObservableHolder.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleDelay.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleTakeUntilCompletable.java

*

/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/ActionSubscriber.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/InternalObservableUtils.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/plugins/RxJavaSingleExecutionHookDefault.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observables/package-info.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/exceptions/AssemblyStackTraceException.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/AsyncCompletableSubscriber.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subjects/package-info.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleFromObservable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleOnErrorReturn.java
*
/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleToObservable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/ActionObserver.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/functions/Cancellable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/package-info.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/plugins/RxJavaCompletableExecutionHook.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleDoOnSubscribe.java
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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/ObserverSubscriber.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleObserveOn.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/plugins/RxJavaSingleExecutionHook.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleLiftObservableOperator.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/singles/package-info.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/annotations/package-info.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleFromCallable.java
*
/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeLift.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeFlattenIterable.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeOnAssembly.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/observers/AssertableSubscriberObservable.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/SchedulePeriodicHelper.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeDetach.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/subscriptions/CancellableSubscription.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/GenericScheduledExecutorServiceFactory.java

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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleTakeUntilSingle.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/schedulers/SchedulerWhen.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/observers/AssertableSubscriber.java

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/subscriptions/package-info.java

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/CompletableFlatMapSingleToCompletable.java

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/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleTimeout.java

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleFromFuture.java

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 * This plugin class provides 2 ways to customize {@link Scheduler} functionality
 * 1. You may redefine entire schedulers, if you so choose. To do so, override
 * the 3 methods that return Scheduler (io(), computation(), newThread()).
 * 2. You may wrap/decorate an {@link Action0}, before it is handed off to a Scheduler. The
 system-
 * supplied Schedulers (Schedulers.ioScheduler, Schedulers.computationScheduler,
 * Scheduler.newThreadScheduler) all use this hook, so it's a convenient way to
 * modify Scheduler functionality without redefining Schedulers wholesale.
 *
 * Also, when redefining Schedulers, you are free to use/not use the onSchedule decoration hook.
 * <p>
 * See {@link RxJavaPlugins} or the RxJava GitHub Wiki for information on configuring plugins:
 * <a
 href="https://github.com/ReactiveX/RxJava/wiki/Plugins">https://github.com/ReactiveX/RxJava/wiki/Plugins</a>.
 */
```

Found in path(s):

```
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/plugins/RxJavaSchedulersHook.java
```

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 * Original location: https://github.com/JCTools/JCTools/blob/master/jctools-
core/src/main/java/org/jctools/queues/MpmcArrayQueue.java
 */
```

Found in path(s):

```
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
jar/rx/internal/util/unsafe/MpmcArrayQueue.java
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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeCollect.java
*
/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/DeferredScalarSubscriber.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/DeferredScalarSubscriberSafe.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribePublishMulticast.java
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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/SingleOnSubscribeUsing.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeTakeLastOne.java
* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/operators/OnSubscribeReduce.java

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 * Original location: https://github.com/JCTools/JCTools/blob/master/jctools-
core/src/main/java/org/jctools/queues/QueueProgressIndicators.java
 */
```

Found in path(s):

```
*/opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-
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```

```
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 *
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 * Original location: https://github.com/JCTools/JCTools/blob/master/jctools-
core/src/main/java/org/jctools/util/UnsafeAccess.java
 */
```


Found

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* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/unsafe/UnsafeAccess.java

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*/

Found in path(s):

* /opt/cola/permits/1128344293_1676352144.1405265/0/rxjava-1-3-0-sources-1-jar/rx/internal/util/atomic/AtomicReferenceArrayQueue.java

1.107 vim 7.4.629-8.el7_9

1.108 httpcomponents-core 4.4.13

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1.109 httpcore-nio 4.4.13

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1.111 httpclient-cache 4.5.13

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1.112 reactive-streams 1.0.3

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```
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jar/org/reactivestreams/Publisher.java  
* /opt/cola/permits/1135840663_1613613063.73/0/reactive-streams-1-0-3-sources-3-  
jar/org/reactivestreams/FlowAdapters.java  
*  
/opt/cola/permits/1135840663_1613613063.73/0/reactive-streams-1-0-3-sources-3-  
jar/org/reactivestreams/Processor.java  
* /opt/cola/permits/1135840663_1613613063.73/0/reactive-streams-1-0-3-sources-3-  
jar/org/reactivestreams/Subscription.java  
* /opt/cola/permits/1135840663_1613613063.73/0/reactive-streams-1-0-3-sources-3-  
jar/org/reactivestreams/Subscriber.java
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1.113 commons-logging 1.2

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* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/Log4JLogger.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/LogFactoryImpl.java
*
/opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/Jdk13LumberjackLogger.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/SimpleLog.java
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* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/LogSource.java
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* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/LogKitLogger.java
* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/Log.java

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* /opt/cola/permits/1135840457_1613613080.13/0/commons-logging-1-1-sources-9-jar/org/apache/commons/logging/impl/ServletContextCleaner.java

1.114 commons-codec 1.14

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src/test/org/apache/commons/codec/language/DoubleMetaphoneTest.java
contains test data from <http://aspell.net/test/orig/batch0.tab>.
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1.115 javassist 3.27.0-GA

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```
/*
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 */
```

Found in path(s):

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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/rmi/Proxy.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/Visitor.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/Member.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/reflect/CannotInvokeException.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/CtNewWrappedConstructor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/LoaderClassPath.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/rmi/AppletServer.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtConstructor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
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jar/javassist/bytecode/Mnemonic.java
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/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtNewClass.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/SignatureAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtArray.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/convert/TransformNewClass.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/Parser.java
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* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/DefineClassHelper.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/SubroutineScanner.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtMember.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/ExceptionTable.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/rmi/StubGenerator.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/FieldInfo.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/CodeGen.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/CodeAnalyzer.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/reflect/CannotReflectException.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPoolFactoryImpl.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/LocalVariableAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/CallExpr.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/AttributeInfo.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/CodeIterator.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/SymbolTable.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/Subroutine.java

* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/runtime/Inner.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/DefinePackageHelper.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/LineNumberAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPoolFactory.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Modifier.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/annotation/AnnotationsWriter.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CannotCompileException.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Expr.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformFieldAccess.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtPrimitiveType.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/stackmap/BasicBlock.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/Callback.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/MethodInfo.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/NewExpr.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/stackmap/TypeData.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtMethod.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/CondExpr.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPool.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/NewExpr.java
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 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/reflect/Sample.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformAccessArrayField.java
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 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/SoftValueHashMap.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/reflect/Loader.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtField.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/Dump.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/MethodDecl.java
 *
 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/CompileError.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Handler.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/ByteStream.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-

```

jar/javassist/bytecode/stackmap/Tracer.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/HotSwapAgent.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/FieldAccess.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/InnerClassesAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/web/Viewer.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/proxy/ProxyObject.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/convert/TransformCall.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/Symbol.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/ByteArrayClassPath.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/AccessorMaker.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/Lex.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/ast/ASTList.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/MethodCall.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/SerialVersionUID.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/convert/TransformBefore.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/runtime/Cflow.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/convert/Transformer.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/AnnotationsAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/LocalVariableTypeAttribute.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/DuplicateMemberException.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/proxy/MethodFilter.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/analysis/MultiArrayType.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/tools/reflect/Metaobject.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/stackmap/MapMaker.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/compiler/JvstTypeChecker.java

```

* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformReadField.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Loader.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/StackMapTable.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPoolTail.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassPath.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/HotSwapper.java
 *
 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/Javac.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/ControlFlow.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/Opcode.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/analysis/Executor.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/web/Webserver.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/LongVector.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/ProxyObjectOutputStream.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/CastExpr.java
 *
 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/DeprecatedAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/CtClass.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/Translator.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/tools/rmi/Sample.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/bytecode/CodeAttribute.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/NewArray.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/ClassClassPath.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/IntConst.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/util/proxy/MethodHandler.java
 *
 /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/convert/TransformNew.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/scopedpool/ScopedClassPoolRepository.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/expr/Cast.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/NoFieldException.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/SyntaxError.java
 * /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-

```
jar/javassist/compiler/TokenId.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/util/proxy/RuntimeSupport.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-jar/javassist/compiler/ast/Pair.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/convert/TransformWriteField.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/CtNewConstructor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/ConstPool.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/analysis/MultiType.java
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```

```
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Found in path(s):

```
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/MemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/EnumMemberValue.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ByteMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ClassMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/MemberValueVisitor.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/FloatMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/IntegerMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
```

```
jar/javassist/bytecode/annotation/StringMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ArrayMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/BooleanMemberValue.java
*
/opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/LongMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/CharMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/Annotation.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/ShortMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/AnnotationMemberValue.java
* /opt/cola/permits/1135872664_1613621010.52/0/javassist-3-27-0-ga-sources-1-
jar/javassist/bytecode/annotation/DoubleMemberValue.java
```

1.116 classmate 1.5.1

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Java ClassMate library was originally written by Tatu Saloranta (tatu.saloranta@iki.fi)

Other developers who have contributed code are:

* Brian Langel

1.117 httpcomponents-mime 4.5.12

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1.118 jakarta-validation-api 2.0.2

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*/
```

Found in path(s):

```
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/Validator.java  
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/CascadableDescriptor.java  
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintTarget.java  
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/FutureOrPresent.java  
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/constraints/Null.java  
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/ConstraintValidatorContext.java  
*  
/opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/ExecutableDescriptor.java  
* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/groups/Default.java
```

* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/MessageInterpolator.java

* /opt/cola/permits/1135880235_1613624044.2/0/jakarta-validation-api-2-0-2-sources-3-jar/javax/validation/metadata/package-info.java

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1.119 asm 7.3.1

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analysis/common/src/resources/org/apache/lucene/analysis/bg/stopwords.txt,  
analysis/common/src/resources/org/apache/lucene/analysis/hi/stopwords.txt,  
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```

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```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show  
w' and `show c' should show the appropriate  
parts of the General Public License. Of course, the commands you use may  
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mouse-clicks or menu items--whatever suits your program.

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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consider it more useful to permit linking proprietary applications with the  
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@ignore

@c Set file name and title for man page.



@setfilename gpl  
@settitle GNU General Public License  
@c man begin SEEALSO  
gfdl(7), fsf-funding(7).  
@c man end  
@c man begin COPYRIGHT  
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@end ignore  
@node Copying  
@c man begin DESCRIPTION  
@unnumbered GNU General Public License  
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@end smallexample

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
@smallexample
@var{program} Copyright (C) @var{year} @var{name of author}
This program comes with ABSOLUTELY NO WARRANTY; for details type @samp{show w}.
This is free software, and you are welcome to redistribute it
under certain conditions; type @samp{show c} for details.
@end smallexample
```

The hypothetical commands `@samp{show w}` and `@samp{show c}` should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an ```about box"`.

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@c man end

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Version 2.1, February 1999



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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

## HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

Thomas Funke (thf@zelator.in-berlin.de(?)) and

Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.

Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.

Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader

specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports.

Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk).

Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task).  
Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.  
David Chase, then at Olivetti Research, suggested several improvements.  
Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC.  
Jesse Hull and John Ellis supplied the C++ interface code.  
Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.)  
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For more information see the README file in the examples directory.

Directory native/fdlibm

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We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

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The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute

the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2)

will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

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d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

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- a) Accompany the work with the complete corresponding machine-readable



source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

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Version 3, 29 June 2007

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```

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```
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This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

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@cindex LGPL, Lesser General Public License

@center Version 2.1, February 1999

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@appendixsubsec Preamble

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The ordinary

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We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

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@iftex

@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

@end iftex

@ifinfo

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## 1.141 jersey-media-jaxb 2.33

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# 1.143 basesystem 10.0-7.el7.centos

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Summary: The skeleton package which defines a simple CentOS Linux system

Name: basesystem

Version: 10.0

Release: 7%{?dist}

License: Public Domain

Group: System Environment/Base

Requires(pre): setup filesystem

BuildRoot: %(mktemp -ud % {\_tmppath})/% {name}-% {version}-% {release}-XXXXXX)

BuildArch: noarch

%description

Basesystem defines the components of a basic CentOS Linux system (for example, the package installation order to use during bootstrapping). Basesystem should be in every installation of a system, and it should never be removed.

%prep

%build

%install

%clean

%files

%defattr(-,root,root,-)

%changelog

\* Fri Jun 27 2014 Johnny Hughes <johnny@centos.org> - 10.0-7.el7.centos  
- Roll in CentOS Branding

\* Fri Dec 27 2013 Daniel Mach <dmach@redhat.com> - 10.0-7  
- Mass rebuild 2013-12-27

\* Tue Mar 06 2012 Ondrej Vasik <ovasik@redhat.com> 10.0-6  
- remove again reference to Fedora after RHEL-7 import(#800464)

\* Thu

Jun 23 2011 Ondrej Vasik <ovasik@redhat.com> 10.0-5  
- fix FTBFS typo (#715640), add disttag

\* Fri May 21 2010 Ondrej Vasik <ovasik@redhat.com> - 10.0-4

- remove reference to Fedora, add dist tag

Related: rhbz#566527

\* Mon Apr 26 2010 Dennis Gregorovic <dgregor@redhat.com> - 10.0-3.2

- Rebuilt for RHEL 6

Related: rhbz#566527

\* Mon Apr 26 2010 Dennis Gregorovic <dgregor@redhat.com> - 10.0-3.1

- Rebuilt for RHEL 6

Related: rhbz#566527

\* Fri Jul 24 2009 Fedora Release Engineering <rel-eng@lists.fedoraproject.org> - 10.0-3

- Rebuilt for [https://fedoraproject.org/wiki/Fedora\\_12\\_Mass\\_Rebuild](https://fedoraproject.org/wiki/Fedora_12_Mass_Rebuild)

\* Mon Feb 23 2009 Fedora Release Engineering <rel-eng@lists.fedoraproject.org> - 10.0-2

- Rebuilt for [https://fedoraproject.org/wiki/Fedora\\_11\\_Mass\\_Rebuild](https://fedoraproject.org/wiki/Fedora_11_Mass_Rebuild)

\* Mon Oct 20 2008 Phil Knirsch <pknirsch@redhat.com> 10.0-1

- Bump version and rebuild for Fedora 10 (#451289)

\* Fri Mar 02 2007 Phil Knirsch <pknirsch@redhat.com> - 8.1-1

- Cleanup per package review (#225608)

\* Wed Jul 12 2006 Jesse Keating

<jkeating@redhat.com> - 8.0-5.1.1

- rebuild

\* Fri Dec 09 2005 Jesse Keating <jkeating@redhat.com>

- rebuild

\* Wed Sep 22 2004 Bill Nottingham <notting@redhat.com>

- rebuild

\* Fri Feb 13 2004 Elliot Lee <sopwith@redhat.com>

- rebuild

\* Wed Jan 22 2003 Tim Powers <timp@redhat.com>

- rebuild

\* Wed Aug 21 2002 Bill Nottingham <notting@redhat.com>

- bump rev

\* Fri Jun 21 2002 Tim Powers <timp@redhat.com>

- automated rebuild

\* Thu May 23 2002 Tim Powers <timp@redhat.com>

- automated rebuild

\* Wed Jan 09 2002 Tim Powers <timp@redhat.com>

- automated rebuild

\* Wed Jul 12 2000 Prospector <bugzilla@redhat.com>

- automatic rebuild

\* Tue Jun 6 2000 Bill Nottingham <notting@redhat.com>

- rebuild. Wheee.

\* Sun Mar 21 1999 Cristian Gafton <gafton@redhat.com>

- auto rebuild in the new build environment (release 4)

\* Tue Mar 16 1999 Cristian Gafton <gafton@redhat.com>

- don't require rpm (breaks dependency chain)

\* Tue Mar 16 1999 Erik Troan <ewt@redhat.com>

- require rpm

\* Wed Dec 30

1998 Cristian Gafton <gafton@redhat.com>

- build for 6.0

\* Tue Aug 11 1998 Jeff Johnson <jbj@redhat.com>

- build root

\* Mon Apr 27 1998 Prospector System <bugs@redhat.com>

- translations modified for de, fr, tr

\* Tue Sep 23 1997 Erik Troan <ewt@redhat.com>

- made a noarch package

Found in path(s):

\* /opt/cola/permits/1151233448\_1617817524.04/0/basesystem-10.0-7.el7.centos.src.rpm-cosi-expand-archive-tqrt14Z0/basesystem.spec

# 1.144 gpg-pubkey f4a80eb5-53a7ff4b

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## 1.146 lombok 1.18.20

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rwitserloot/lombok.patcher

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## 1.148 util-linux 2.23.2-65.el7\_9.1

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```
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```

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```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute
it
under certain conditions; type `show c' for details.
```

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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consider it more useful to permit linking proprietary applications with the  
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Public License instead of this License.

```
size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0
```

```

```

```
#1: 32 7648 0x83
```



#2: 7680 8704 0xa5  
#5: 7936 4864 0x7 (freebsd)  
#6: 12544 3584 0x7 (freebsd)

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors  
Units = sectors of 1 \* 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x00000001

| Device | Boot | Start | End | Blocks | Id | System |
|--------|------|-------|-----|--------|----|--------|
|--------|------|-------|-----|--------|----|--------|

-----

Create 1st primary partition  
ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----  
\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors  
Units = sectors of 1 \* 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x00000001

| Device      | Boot | Start | End  | Blocks | Id | System |
|-------------|------|-------|------|--------|----|--------|
| __ts_dev__1 |      | 2048  | 4095 | 1024   | 83 | Linux  |

-----

Create 2st primary partition  
1bebf87248e05d6e4e62b749da65d023  
bsd.img  
Set 2nd partition type  
2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----  
\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors  
Units = sectors of 1 \* 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x00000001

| Device      | Boot | Start | End   | Blocks | Id | System  |
|-------------|------|-------|-------|--------|----|---------|
| __ts_dev__1 |      | 2048  | 4095  | 1024   | 83 | Linux   |
| __ts_dev__2 |      | 4096  | 20479 | 8192   | a5 | FreeBSD |

-----

Create default BSD  
2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| #  | start | end   | size  | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| c: | 4096  | 20479 | 16384 | unused | 0      | 0     |      |
| d: | 0     | 16064 | 16065 | unused | 0      | 0     |      |

BSD disklabel command (m for help):

Command (m for help):

-----

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

| #  | start | end   | size  | fstype | [fsize | bsize | cpg] |
|----|-------|-------|-------|--------|--------|-------|------|
| a: | 4096  | 6144  | 2049  | 4.2BSD | 0      | 0     | 0    |
| c: | 4096  | 20479 | 16384 | unused | 0      | 0     |      |
| d: | 0     | 16064 | 16065 | unused | 0      | 0     |      |

BSD disklabel command (m for help):

Command (m for help):

-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

0 unused      5 4.1BSD      9 4.4LFS      d boot  
 1 swap  
     6 Eighth Edition   a unknown      e ADOS  
 2 Version 6      7 4.2BSD      b HPFS      f HFS  
 3 Version 7      8 MS-DOS      c ISO-9660      10 AdvFS  
 4 System V

BSD disklabel command (m for help):

/\*

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## 1.149 kitchen 1.1.1

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Version 2.1, February 1999

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## 1.150 pyxattr 0.5.1

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<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

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## 1.151 antlr 4.6

### 1.151.1 Available under license :

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Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ANTLRLexer.java

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\*/

/\*

This file contains the actual layout of the messages emitted by ANTLR.

The text itself is coming out of the languages/\*stg files, according to the chosen locale.

This file contains the default format ANTLR uses.

\*/

```
location(file, line, column) ::= "<file>(<line>,<column>)"
```

```
message(id, text) ::= "error <id> : <text>"
```

```
report(location, message, type) ::= "<location> : <type> <message.id> : <message.text>"
```

```
wantsSingleLineMessage() ::= "true"
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/messages/formats/vs2005.stg
```

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\*/

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/Tool.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ErrorMessage.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/gui/PostScriptDocument.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/semantics/SemanticPipeline.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/GrammarParserInterpreter.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/gui/SystemFontMetrics.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/ListenerDispatchMethod.java
```

\*

```
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/TokenPropertyRef_int.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/automata/LexerATNFactory.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/TokenPropertyRef_text.java
```

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
```

jar/org/antlr/v4/codegen/model/LL1Loop.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/chunk/QRetValueRef.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/chunk/ActionTemplate.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/RuleActionFunction.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Choice.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/Alternative.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/OptionalBlock.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/target/Python2Target.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/tool/ast/GrammarASTWithOptions.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/LexerFile.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/BaseVisitorFile.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/RuleElement.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/chunk/ThisRulePropertyRef\_text.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/chunk/RetValueRef.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/ArgAction.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/target/JavaScriptTarget.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/tool/ast/RuleElementAST.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/LeftRecursiveRuleFunction.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/LL1OptionalBlockSingleAlt.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Sync.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/decl/ContextRuleListGetterDecl.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/LabelElementPair.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/decl/CodeBlock.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/TestSetInline.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-  
 jar/org/antlr/v4/codegen/model/chunk/SetNonLocalAttr.java

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/ListLabelRef.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/RulePropertyRef\_text.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/TokenPropertyRef\_index.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/Grammar.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/ArgRef.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/automata/TailEpsilonRemover.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/LocalRef.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/PredAST.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/target/CppTarget.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/GrammarASTErrorNode.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/LexerGrammar.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/misc/FrequencySet.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Lexer.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/LL1PlusBlockSingleAlt.java  
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 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/ThisRulePropertyRef\_stop.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/QuantifierAST.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/AltAST.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/OutputModelObject.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/LeftRecursionCyclesMessage.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/decl/ContextTokenListIndexedGetterDecl.java  
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 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ToolMessage.java  
 \*  
 /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/RuleSempredFunction.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/v4ParserException.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/LL1Choice.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/chunk/ThisRulePropertyRef\_start.java  
 \* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-

```

jar/org/antlr/v4/semantics/SymbolCollector.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/ANTLRToolListener.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/NonLocalAttrRef.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/VisitorFile.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/CodeBlockForOuterMostAlt.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/ActionTranslator.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/StarBlock.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/CodeGeneratorExtension.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/parse/GrammarASTAdaptor.java
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/Action.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/gui/BasicFontMetrics.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/Attribute.java
*
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/model/dbg.java
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/analysis/LeftRecursiveRuleTransformer.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/parse/TokenVocabParser.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/automata/ATNFactory.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/MatchSet.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/decl/ContextGetterDecl.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/RuleRefAST.java
*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/ast/StarBlockAST.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/chunk/RulePropertyRef_stop.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/model/ElementFrequenciesVisitor.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-

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jar/org/antlr/v4/codegen/model/decl/AltLabelStructDecl.java
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/codegen/LexerFactory.java
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/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/semantics/RuleCollector.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/gui/Trees.java
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/AttributeDict.java
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
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```

*
/opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/misc/Utils.java
No license file was found, but licenses were detected in source scan.

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*/

// args must be <object-model-object>, <fields-resulting-in-STs>

ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<namedActions.header>
using System;
using System.Text;
using System.Diagnostics;
using System.Collections.Generic;
using Antlr4.Runtime;

```

```

using
 Antlr4.Runtime.Atn;
using Antlr4.Runtime.Misc;
using Antlr4.Runtime.Tree;
using DFA = Antlr4.Runtime.Dfa.DFA;

<parser>
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<header>
using Antlr4.Runtime.Misc;
using IParseTreeListener = Antlr4.Runtime.Tree.IParseTreeListener;
using IToken = Antlr4.Runtime.IToken;

/// \<summary>
/// This interface defines a complete listener for a parse tree produced by
/// \<see cref="<csIdentifier.(file.parserName)>"/>.
/// \</summary>
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public interface I<file.grammarName>Listener : IParseTreeListener {
 <file.listenerNames: {Iname |
/// \<summary>
<if(file.listenerLabelRuleNames.(Iname))>
/// Enter a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in
 \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(Iname)>"/>.
<else>
/// Enter a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
void Enter<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname; format="cap">Context
context);
/// \<summary>
<if(file.listenerLabelRuleNames.(Iname))>
/// Exit a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(Iname)>"/>.
<else>
/// Exit a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.

```

```

<endif>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
void Exit<lname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<lname; format="cap">Context
context);}; separator="\n">
}
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

```

```

BaseListenerFile(file, header, namedActions) ::= <<

```

```

<fileHeader(file.grammarFileName,
file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<header>

```

```

using Antlr4.Runtime.Misc;
using IErrorNode = Antlr4.Runtime.Tree.IErrorNode;
using ITerminalNode = Antlr4.Runtime.Tree.ITerminalNode;
using IToken = Antlr4.Runtime.IToken;
using ParserRuleContext = Antlr4.Runtime.ParserRuleContext;

```

```

/// \<summary>
/// This class provides an empty implementation of \<see cref="I<file.grammarName>Listener"/>,
/// which can be extended to create a listener which only needs to handle a subset
/// of the available methods.
/// \</summary>

```

```

[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]

```

```

public partial class <file.grammarName>BaseListener : I<file.grammarName>Listener {
<file.listenerNames: {lname |

```

```

/// \<summary>

```

```

<if(file.listenerLabelRuleNames.(lname))>

```

```

/// Enter a parse tree produced by the \<c><lname>\</c>

```

```

/// labeled alternative in \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(lname)>"/>.

```

```

<else>

```

```

///

```

```

Enter a parse tree produced by \<see cref="<file.parserName>.<lname>"/>.

```

```

<endif>

```

```

/// \<para>The default implementation does nothing.\</para>

```

```

/// \</summary>

```

```

/// \<param name="context">The parse tree.\</param>

```

```

public virtual void Enter<lname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<lname;
format="cap">Context context) { \}

```

```

/// \<summary>

```

```

<if(file.listenerLabelRuleNames.(Iname))>
/// Exit a parse tree produced by the \<c><Iname>\</c>
/// labeled alternative in \<see cref="<file.parserName>.<file.listenerLabelRuleNames.(Iname)>"/>.
<else>
/// Exit a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
/// \<para>The default implementation does nothing.\</para>
/// \</summary>
/// \<param name="context">The parse tree.\</param>
public virtual void Exit<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname;
format="cap">Context context) { \} }; separator="\n">

/// \<inheritdoc/>
/// \<remarks>The default implementation does nothing.\</remarks>
public
virtual void EnterEveryRule([NotNull] ParserRuleContext context) { }
/// \<inheritdoc/>
/// \<remarks>The default implementation does nothing.\</remarks>
public virtual void ExitEveryRule([NotNull] ParserRuleContext context) { }
/// \<inheritdoc/>
/// \<remarks>The default implementation does nothing.\</remarks>
public virtual void VisitTerminal([NotNull] ITerminalNode node) { }
/// \<inheritdoc/>
/// \<remarks>The default implementation does nothing.\</remarks>
public virtual void VisitErrorNode([NotNull] IErrorNode node) { }
}
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

```

```

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<header>
using Antlr4.Runtime.Misc;
using Antlr4.Runtime.Tree;
using IToken = Antlr4.Runtime.IToken;

/// \<summary>
/// This interface defines a complete generic visitor for a parse tree produced
/// by \<see
cref="<csIdentifier.(file.parserName)>"/>.
/// \</summary>
/// \<typeparam name="Result">The return type of the visit operation.\</typeparam>
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]

```



```

[System.CLSCompliant(false)]
public interface I<file.grammarName>Visitor<Result> : IParseTreeVisitor<Result> {
 <file.visitorNames> { Iname |
 /// <summary>
 <if(file.visitorLabelRuleNames.(Iname))>
 /// Visit a parse tree produced by the <c><Iname></c>
 /// labeled alternative in <see cref="<file.parserName>.<file.visitorLabelRuleNames.(Iname)>">.
 <else>
 /// Visit a parse tree produced by <see cref="<file.parserName>.<Iname>">.
 <endif>
 /// </summary>
 /// <param name="context">The parse tree.</param>
 /// <return>The visitor result.</return>
 Result Visit<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname; format="cap">Context
 context);}; separator="\n">
 }
 <if(file.genPackage)>
 } // namespace <file.genPackage>
 <endif>
>>

```

```

BaseVisitorFile(file, header,
 namedActions) ::= <<
 <fileHeader(file.grammarFileName, file.ANTLRVersion)>
 <if(file.genPackage)>
 namespace <file.genPackage> {
 <endif>
 <header>
 using Antlr4.Runtime.Misc;
 using Antlr4.Runtime.Tree;
 using IToken = Antlr4.Runtime.IToken;
 using ParserRuleContext = Antlr4.Runtime.ParserRuleContext;

 /// <summary>
 /// This class provides an empty implementation of <see cref="I<file.grammarName>Visitor{Result}">,
 /// which can be extended to create a visitor which only needs to handle a subset
 /// of the available methods.
 /// </summary>
 /// <typeparam name="Result">The return type of the visit operation.</typeparam>
 [System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
 [System.CLSCompliant(false)]
 public partial class <file.grammarName>BaseVisitor<Result> : AbstractParseTreeVisitor<Result>,
 I<file.grammarName>Visitor<Result> {
 <file.visitorNames> { Iname |
 /// <summary>
 <if(file.visitorLabelRuleNames.(Iname))>
 /// Visit a parse tree produced by the <c><Iname></c>
 ///

```

```

 labeled alternative in \<see cref="<file.parserName>.<file.visitorLabelRuleNames.(Iname)>"/>.
<else>
// Visit a parse tree produced by \<see cref="<file.parserName>.<Iname>"/>.
<endif>
// \<para>
// The default implementation returns the result of calling \<see
cref="AbstractParseTreeVisitor{Result\}.VisitChildren(IRuleNode)"/>
// on \<paramref name="context"/>.
// \</para>
// \</summary>
// \<param name="context">The parse tree.\</param>
// \<return>The visitor result.\</return>
public virtual Result Visit<Iname; format="cap">([NotNull] <csIdentifier.(file.parserName)>.<Iname;
format="cap">Context context) { return VisitChildren(context); \}}; separator="\n">
}
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
//-----
// \<auto-generated>
// This code was generated by a tool.
// ANTLR Version: <ANTLRVersion>
//
// Changes
// to this file may cause incorrect behavior and will be lost if
// the code is regenerated.
// \</auto-generated>
//-----

// Generated from <grammarFileName> by ANTLR <ANTLRVersion>

// Unreachable code detected
#pragma warning disable 0162
// The variable '...' is assigned but its value is never used
#pragma warning disable 0219
// Missing XML comment for publicly visible type or member '...'
#pragma warning disable 1591
// Ambiguous reference in cref attribute
#pragma warning disable 419

>>

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

```

```

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public partial class <csIdentifier.(parser.name)> : <superClass; null="Parser"> {
 protected static DFA[] decisionToDFA;
 protected static PredictionContextCache
 sharedContextCache = new PredictionContextCache();
 <if(parser.tokens)>
 public const int
 <parser.tokens:{k | <k>=<parser.tokens.(k)>}; separator=", ", wrap, anchor>;
 <endif>
 public const int
 <parser.rules:{r | RULE_<r.name> = <r.index>}; separator=", ", wrap, anchor>;
 public static readonly string[] ruleNames = {
 <parser.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>
 };

 <vocabulary(parser.literalNames, parser.symbolicNames)>

 public override string GrammarFileName { get { return "<parser.grammarFileName>"; } }

 public override string[] RuleNames { get { return ruleNames; } }

 public override string SerializedAtn { get { return _serializedATN; } }

 static <csIdentifier.(parser.name)>() {
 decisionToDFA = new DFA[_ATN.NumberOfDecisions];
 for (int i = 0; i < _ATN.NumberOfDecisions; i++) {
 decisionToDFA[i] = new DFA(_ATN.GetDecisionState(i), i);
 }
 }

 <namedActions.members>
 <parser:(ctor)()>
 <funcs; separator="\n">

 <if(sempredFuncs)>
 public override
 bool Sempred(RuleContext _localctx, int ruleIndex, int predIndex) {
 switch (ruleIndex) {
 <parser.sempredFuncs.values:{f}
 case <f.ruleIndex>: return <f.name>_sempred((<f.ctxType>)_localctx, predIndex);}; separator="\n">
 }
 return true;
 }
 <sempredFuncs.values; separator="\n">
 <endif>

```

```

<atn>
}
>>

vocabulary(literalNames, symbolicNames) ::= <<
private static readonly string[] _LiteralNames = {
<literalNames:{t | <t>}; null="null", separator=", ", wrap, anchor>
};
private static readonly string[] _SymbolicNames = {
<symbolicNames:{t | <t>}; null="null", separator=", ", wrap, anchor>
};
public static readonly IVocabulary DefaultVocabulary = new Vocabulary(_LiteralNames, _SymbolicNames);

[NotNull]
public override IVocabulary Vocabulary
{
get
{
return DefaultVocabulary;
}
}
>>

dumpActions(recog, argFuncs, actionFuncs, sempredFuncs) ::= <<
<if(actionFuncs)>
public override void Action(RuleContext _localctx, int ruleIndex, int actionIndex) {
switch (ruleIndex) {
<recog.actionFuncs.values:{f}
case
<f.ruleIndex> : <f.name>_action(<if(!recog.modes)><f.ctxType><endif>_localctx, actionIndex); break;};
separator="\n">
}
}
<actionFuncs.values; separator="\n">
<endif>
<if(sempredFuncs)>
public override bool Sempred(RuleContext _localctx, int ruleIndex, int predIndex) {
switch (ruleIndex) {
<recog.sempredFuncs.values:{f}
case <f.ruleIndex> : return <f.name>_sempred(<if(!recog.modes)><f.ctxType><endif>_localctx, predIndex);};
separator="\n">
}
return true;
}
<sempredFuncs.values; separator="\n">
<endif>
>>

```

```

parser_ctor(parser) ::= <<
public <csIdentifier.(parser.name)>(ITokenStream input)
: base(input)
{
Interpreter = new ParserATNSimulator(this, _ATN, decisionToDFA, sharedContextCache);
}
>>

/* This generates a private method since the actionIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleActionFunction(r, actions) ::= <<
private void <r.name>_action(<r.ctxType> _localctx, int actionIndex) {
switch (actionIndex)
{
<actions:{index|
case <index>: <actions.(index)> break; }; separator="\n">
}
}
>>

/* This generates a private method since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleSempredFunction(r, actions) ::= <<
private bool <r.name>_sempred(<r.ctxType> _localctx, int predIndex) {
switch (predIndex) {
<actions:{index|
case <index>: return <actions.(index)>; }; separator="\n">
}
return true;
}
>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<if(ruleCtx)>
<ruleCtx>
<endif>
<altLabelCtxs:{l | <altLabelCtxs.(l)> }; separator="\n">

[RuleVersion(<namedActions.version; null="0">)]
<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public <endif><currentRule.ctxType>
<csIdentifier.(currentRule.name)>(<args; separator=", ">) {
<currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, State<currentRule.args:{a | ,
<csIdentifier.(a.name)>>});

```

```

EnterRule(_localctx,
<currentRule.startState>, RULE_<currentRule.name>);
<namedActions.init>
<locals; separator="\n">
try {
<if(currentRule.hasLookaheadBlock)>
 int _alt;
<endif>
 <code>
 <postamble; separator="\n">
 <namedActions.after>
}
<if(exceptions)>
<exceptions; separator="\n">
<else>
catch (RecognitionException re) {
 _localctx.exception = re;
 ErrorHandler.ReportError(this, re);
 ErrorHandler.Recover(this, re);
}
<endif>
finally {
 <finallyAction>
 ExitRule();
}
return _localctx;
}
>>

```

```

LeftFactoredRuleFunction(currentRule,args,code,locals,namedActions,finallyAction,postamble) ::=
<<

```

```

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>private <endif><currentRule.ctxType>
<csIdentifier(currentRule.name)><(args; separator=", "> {
 <currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, State<currentRule.args:{a | ,
 <csIdentifier(a.name)>>>);
 EnterLeftFactoredRule(_localctx, <currentRule.startState>, RULE_<currentRule.variantOf>);
 <namedActions.init>
 <locals;
 separator="\n">
 try {
 <if(currentRule.hasLookaheadBlock)>
 int _alt;
 <endif>
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 }

```

```

catch (RecognitionException re) {
 _localctx.exception = re;
 ErrorHandler.ReportError(this, re);
 ErrorHandler.Recover(this, re);
}
finally {
 <finallyAction>
 ExitRule();
}
return _localctx;
}
>>

```

// This behaves similar to RuleFunction (enterRule is called, and no adjustments  
// are made to the parse tree), but since it's still a variant no context class  
// needs to be generated.

```

LeftUnfactoredRuleFunction(currentRule,args,code,locals,namedActions,finallyAction,postamble) ::=
<<

```

```

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>private <endif><currentRule.ctxType>
<csIdentifier(currentRule.name)><(args; separator=", ">) {
 <currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, State<currentRule.args:{a | ,
<csIdentifier(a.name)>}>);
 EnterRule(_localctx,
 <currentRule.startState>, RULE_<currentRule.variantOf>);
 <namedActions.init>
 <locals; separator="\n">
 try {
 <if(currentRule.hasLookaheadBlock)>
 int _alt;
 <endif>
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 }
 catch (RecognitionException re) {
 _localctx.exception = re;
 ErrorHandler.ReportError(this, re);
 ErrorHandler.Recover(this, re);
 }
 finally {
 <finallyAction>
 ExitRule();
 }
 return _localctx;
}
>>

```

```
LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
namedActions,finallyAction,postamble) ::=
```

```
<<
```

```
<ruleCtx>
```

```
<altLabelCtxs:{l | <altLabelCtxs.l>}>; separator="\n">
```

```
[RuleVersion(<namedActions.version; null="0">)]
```

```
<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public <endif><currentRule.ctxType>
```

```
<csIdentifier.(currentRule.name)>(<args; separator=", ">) {
```

```
return <csIdentifier.(currentRule.name)>(0<currentRule.args:{a | , <csIdentifier.(a.name)>}>);
```

```
}
```

```
private <currentRule.ctxType> <csIdentifier.(currentRule.name)>(int
```

```
_p<args:{a | , <a>}>) {
```

```
ParserRuleContext _parentctx = Context;
```

```
int _parentState = State;
```

```
<currentRule.ctxType> _localctx = new <currentRule.ctxType>(Context, _parentState<currentRule.args:{a | ,
<csIdentifier.(a.name)>}>);
```

```
<currentRule.ctxType> _prevctx = _localctx;
```

```
int _startState = <currentRule.startState>;
```

```
EnterRecursionRule(_localctx, <currentRule.startState>, RULE_<currentRule.name>, _p);
```

```
<namedActions.init>
```

```
<locals; separator="\n">
```

```
try {
```

```
<if(currentRule.hasLookaheadBlock)>
```

```
int _alt;
```

```
<endif>
```

```
<code>
```

```
<postamble; separator="\n">
```

```
<namedActions.after>
```

```
}
```

```
catch (RecognitionException re) {
```

```
_localctx.exception = re;
```

```
ErrorHandler.ReportError(this, re);
```

```
ErrorHandler.Recover(this, re);
```

```
}
```

```
finally {
```

```
<finallyAction>
```

```
UnrollRecursionContexts(_parentctx);
```

```
}
```

```
return _localctx;
```

```
}
```

```
>>
```

```
CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
```

```
<if(currentOuterMostAltCodeBlock.altLabel)>_localctx = new <currentOuterMostAltCodeBlock.altLabel>;
```



```

format="cap">Context(_localctx);<endif>
EnterOuterAlt(_localctx, <currentOuterMostAltCodeBlock.alt.altNum>);
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<
{
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
}
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
<if(choice.label)><labelref(choice.label)> = TokenStream.LT(1);<endif>
<preamble; separator="\n">
switch (TokenStream.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlock(choice, alts, error) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
switch (TokenStream.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr)
::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
<preamble; separator="\n">
if (<expr>) {
<alts; separator="\n">
}
<else if (!(<followExpr>)) <error!>

```

>>

```
LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
<preamble; separator="\n">
while (<loopExpr>) {
 <alts; separator="\n">
 State = <choice.loopBackStateNumber>;
 ErrorHandler.Sync(this);
 <iteration>
}
>>
```

```
LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
State = <choice.blockStartStateNumber>;<! alt block decision !>
ErrorHandler.Sync(this);
<preamble; separator="\n">
do {
 <alts; separator="\n">
 State = <choice.stateNumber>;<! loopback/exit decision !>
 ErrorHandler.Sync(this);
 <iteration>
} while (<loopExpr>);
>>
```

// LL(\*) stuff

```
AltBlock(choice, preamble, alts, error) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
<if(choice.label)><labelref(choice.label)> = TokenStream.LT(1);<endif>
<preamble;
separator="\n">
switch (Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context)) {
 <alts:{alt |
case <i>:
 <alt>
 break;}; separator="\n">
}
>>
```

```
OptionalBlock(choice, alts, error) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
switch (Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context)) {
 <alts:{alt |
case <i><if(!choice.ast.greedy)>+1<endif>:

```

```

<alt>
break;}; separator="\n">
}
>>

StarBlock(choice, alts, sync, iteration) ::= <<
State = <choice.stateNumber>;
ErrorHandler.Sync(this);
_alt = Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context);
while (_alt!=<choice.exitAlt> && _alt!=global::Antlr4.Runtime.Atn.ATN.INVALID_ALT_NUMBER) {
if (_alt==1<if(!choice.ast.greedy)>+1<endif>) {
<iteration>
<alts> <! should only be one !>
}
State = <choice.loopBackStateNumber>;
ErrorHandler.Sync(this);
_alt = Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context);
}
>>

PlusBlock(choice, alts, error) ::= <<
State
= <choice.blockStartStateNumber>;<! alt block decision !>
ErrorHandler.Sync(this);
_alt = 1<if(!choice.ast.greedy)>+1<endif>;
do {
switch (_alt) {
<alts:{alt|
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break;}; separator="\n">
default:
<error>
}
State = <choice.loopBackStateNumber>;<! loopback/exit decision !>
ErrorHandler.Sync(this);
_alt = Interpreter.AdaptivePredict(TokenStream,<choice.decision>,Context);
} while (_alt!=<choice.exitAlt> && _alt!=global::Antlr4.Runtime.Atn.ATN.INVALID_ALT_NUMBER);
>>

Sync(s) ::= "Sync(<s.expecting.name>);"

ThrowNoViableAlt(t) ::= "throw new NoViableAltException(this);"

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" || ">
>>

```

```

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

// produces
smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange(<offsetShift(s.varName, bits.shift)>)> && ((1L \<< <offsetShift(s.varName, bits.shift)>) &
(<bits.ttypes:{ ttype | (1L \<< <offsetShift(tokenType.(ttype), bits.shift)>)}; separator=" | ">) != 0)
%>

isZero ::= [
"0":true,
default:false
]

offsetShift(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ ttype | <s.varName>==<tokenType.(ttype)>}; separator=" || ">
%>

cases(ttypes) ::= <<
<ttypes:{ t | case <tokenType.(t)>:}; separator="\n">
>>

InvokeRule(r, argExprsChunks) ::= <<
State = <r.stateNumber>; <if(r.labels)><r.labels:{1 | <labelref(l)> =
}><endif><csIdentifier.(r.name)><(if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)><endif><endif><arg
ExprsChunks>;
>>

MatchToken(m)
::= <<
State = <m.stateNumber>; <if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>Match(<tokenType.(m.name)>);
>>

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

CommonSetStuff(m, expr, capture, invert) ::= <<
State = <m.stateNumber>;

```

```

<if(m.labels)><m.labels:{1 | <labelref(l)> = }>TokenStream.LT(1);<endif>
<capture>
if (<if(invert)><m.varName> \<= 0 || <else>!<endif>(<expr>)) {
 <if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>ErrorHandler.RecoverInline(this);
}
else {
 ErrorHandler.ReportMatch(this);
 Consume();
}
>>

Wildcard(w) ::= <<
State = <w.stateNumber>;
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>MatchWildcard();
>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

SemPred(p, chunks, failChunks) ::= <<
State = <p.stateNumber>;
if (!(<chunks>)) throw new FailedPredicateException(this, <p.predicate><if(failChunks)>,
 <failChunks><elseif(p.msg)>, <p.msg><endif>);
>>

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
 <catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "Skip();"
LexerMoreCommand() ::= "More();"
LexerPopModeCommand() ::= "PopMode();"

LexerTypeCommand(arg, grammar) ::= "_type = <tokenType.(arg)>";
LexerChannelCommand(arg, grammar) ::= "_channel = <channelName.(arg)>";
LexerModeCommand(arg, grammar) ::= "_mode = <modeName.(arg)>";
LexerPushModeCommand(arg, grammar) ::= "PushMode(<modeName.(arg)>);"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "_localctx.<csIdentifier.(a.name)>"

```

```

LocalRef(a) ::= "_localctx.<csIdentifier.(a.name)>"
RetValRef(a) ::= "_localctx.<csIdentifier.(a.name)>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<csIdentifier.(a.name)>"
/** How to translate $TokenLabel */
TokenRef(t) ::= "<ctx(t)>.<csIdentifier.(tokenType.(t.name))>"
LabelRef(t)
 ::= "<ctx(t)>.<csIdentifier.(t.name)>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(csIdentifier.(t.name))>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<csIdentifier.(s.name)> = <rhsChunks>;"

TokenLabelType() ::= "<file.TokenLabelType; null={IToken}>"
InputSymbolType() ::= "<file.InputSymbolType; null={IToken}>"

TokenPropertyRef_text(t) ::= "<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Text:null)"
TokenPropertyRef_type(t) ::= "<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Type:0)"
TokenPropertyRef_line(t) ::= "<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Line:0)"
TokenPropertyRef_pos(t) ::=
"<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.CharPositionInLine:0)"
TokenPropertyRef_channel(t) ::=
"<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.Channel:0)"
TokenPropertyRef_index(t) ::=
"<ctx(t)>.<tokenType.(t.label)>!=null?<ctx(t)>.<tokenType.(t.label)>.TokenIndex:0)"
TokenPropertyRef_int(t)
 ::= "<ctx(t)>.<tokenType.(t.label)>!=null?int.Parse(<ctx(t)>.<tokenType.(t.label)>.Text):0)"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label>!=null?(<ctx(r)>.<r.label>.Start):null)"
RulePropertyRef_stop(r) ::= "<ctx(r)>.<r.label>!=null?(<ctx(r)>.<r.label>.Stop):null)"
RulePropertyRef_text(r) ::=
"<ctx(r)>.<r.label>!=null?TokenStream.GetText(<ctx(r)>.<r.label>.Start,<ctx(r)>.<r.label>.Stop):null)"
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "this"

ThisRulePropertyRef_start(r) ::= "_localctx.Start"
ThisRulePropertyRef_stop(r) ::= "_localctx.Stop"
ThisRulePropertyRef_text(r) ::= "TokenStream.GetText(_localctx.Start, TokenStream.LT(-1))"
ThisRulePropertyRef_ctx(r) ::= "_localctx"
ThisRulePropertyRef_parser(r) ::= "this"

NonLocalAttrRef(s) ::= <%((<s.ruleName;
format="cap">Context)GetInvokingContext(<s.ruleIndex>)).<csIdentifier.(s.name)>%>
SetNonLocalAttr(s, rhsChunks) ::=
<%((<s.ruleName; format="cap">Context)GetInvokingContext(<s.ruleIndex>)).<csIdentifier.(s.name)>
= <rhsChunks>;%>

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.Add(<labelref(a.label)>);"

TokenDecl(t) ::= "<TokenLabelType() <csIdentifier.(tokenType.(t.name))>"
TokenTypeDecl(t) ::= "int <csIdentifier.(tokenType.(t.name))>;"

```

```

TokenListDecl(t) ::= "IList<IToken> <csIdentifier.(tokenType.(t.name))> = new List<IToken>()"
RuleContextDecl(r) ::= "<r.ctxName> <csIdentifier.(r.name)>"
RuleContextListDecl(rdecl) ::= "IList<<rdecl.ctxName>> <csIdentifier.(rdecl.name)> = new
List<<rdecl.ctxName>>()"

```

```

contextGetterCollection(elementType) ::= <%
<elementType>[]
%>

```

```

ContextTokenGetterDecl(t) ::=
 "public ITerminalNode <csIdentifier.(tokenType.(t.name))>() { return
 GetToken(<csIdentifier.(parser.name)>.<csIdentifier.(tokenType.(t.name))>, 0); }"
ContextTokenListGetterDecl(t) ::= <<
 public <contextGetterCollection("ITerminalNode")> <csIdentifier.(tokenType.(t.name))>() { return
 GetTokens(<csIdentifier.(parser.name)>.<csIdentifier.(tokenType.(t.name))>);
 }
 >>
ContextTokenListIndexedGetterDecl(t) ::= <<
 public ITerminalNode <csIdentifier.(tokenType.(t.name))>(int i) {
 return GetToken(<csIdentifier.(parser.name)>.<csIdentifier.(tokenType.(t.name))>, i);
 }
 >>
ContextRuleGetterDecl(r) ::= <<
 public <r.ctxName> <csIdentifier.(r.name)>() {
 return GetRuleContext<<r.ctxName>>()();
 }
 >>
ContextRuleListGetterDecl(r) ::= <<
 public <contextGetterCollection({<r.ctxName>})> <csIdentifier.(r.name)>() {
 return GetRuleContexts<<r.ctxName>>()();
 }
 >>
ContextRuleListIndexedGetterDecl(r) ::= <<
 public <r.ctxName> <csIdentifier.(r.name)>(int i) {
 return GetRuleContext<<r.ctxName>>(i);
 }
 >>

```

```

LexerRuleContext() ::= "RuleContext"

```

```

/** The rule context name is the rule followed by a suffix; e.g.,
* r becomes rContext.
*/

```

```

RuleContextNameSuffix() ::= "Context"

```

```

ImplicitTokenLabel(tokenName) ::= "_<tokenType.(tokenName)>"

```

```

ImplicitRuleLabel(ruleName) ::= "_<ruleName>"

```

```

ImplicitSetLabel(id) ::= "_tset<id>"

```

ListLabelName(label)

```
::= "_<label>"
```

```
CaptureNextToken(d) ::= "<d.varName> = TokenStream.LT(1);"
```

```
CaptureNextTokenType(d) ::= "<d.varName> = TokenStream.LA(1);"
```

```
StructDecl(struct,ctorAttrs,attrs, getters,dispatchMethods,interfaces,extensionMembers,
```

```
 superClass={ParserRuleContext}) ::= <<
```

```
public partial class <struct.name> :
```

```
<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif><if(interfaces)>, <interfaces>;
```

```
separator=", "><endif> {
```

```
<attrs:{a | public <a>;}; separator="\n">
```

```
<getters:{g | <g>;}; separator="\n">
```

```
<if(ctorAttrs)>public <struct.name>(ParserRuleContext parent, int invokingState) : base(parent, invokingState) {
```

```
<endif>
```

```
public <struct.name>(ParserRuleContext parent, int invokingState<ctorAttrs:{a | , <a>}>)
```

```
: base(parent, invokingState)
```

```
{
```

```
<struct.ctorAttrs:{a | this.<csIdentifier.(a.name)> = <csIdentifier.(a.name)>;}; separator="\n">
```

```
}
```

```
public override int RuleIndex { get { return RULE_<struct.derivedFromName>; } }
```

```
<if(struct.provideCopyFrom)><! don't
```

```
need copy unless we have subclasses !>
```

```
public <struct.name>() { }
```

```
public virtual void CopyFrom(<struct.name> context) {
```

```
base.CopyFrom(context);
```

```
<struct.attrs:{a | this.<csIdentifier.(a.name)> = context.<csIdentifier.(a.name)>;}; separator="\n">
```

```
}
```

```
<endif>
```

```
<dispatchMethods; separator="\n">
```

```
<extensionMembers; separator="\n">
```

```
}
```

```
>>
```

```
AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
```

```
public partial class <struct.name> : <currentRule.name; format="cap">Context {
```

```
<attrs:{a | public <a>;}; separator="\n">
```

```
<getters:{g | <g>;}; separator="\n">
```

```
public <struct.name>(<currentRule.name; format="cap">Context context) { CopyFrom(context); }
```

```
<dispatchMethods; separator="\n">
```

```
}
```

```
>>
```

```
ListenerDispatchMethod(method) ::= <<
```

```
public override void <if(method.isEnter)>Enter<else>Exit<endif>Rule(IParseTreeListener listener) {
```

```
I<parser.grammarName>Listener typedListener = listener as I<parser.grammarName>Listener;
```

```
if (typedListener != null) typedListener.<if(method.isEnter)>Enter<else>Exit<endif><struct.derivedFromName>;
```



```

format="cap">(this);
}
>>

VisitorDispatchMethod(method) ::= <<
public override TResult Accept<TResult>(IParseTreeVisitor<TResult> visitor) {
I<parser.grammarName>Visitor<TResult> typedVisitor = visitor as I<parser.grammarName>Visitor<TResult>;
if (typedVisitor != null) return typedVisitor.Visit<struct.derivedFromName; format="cap">(this);
else return visitor.VisitChildren(this);
}
>>

AttributeDecl(d) ::= "<d.type> <csIdentifier.(d.name)><if(d.initValue)> = <d.initValue><endif>"

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)><typedContext(x.ctx)><endif><csIdentifier.(x.name)>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "<typedContext(actionChunk.ctx)>"

// only casts _localctx to the type when the cast isn't redundant (i.e. to a sub-context for a labeled alt)
typedContext(ctx) ::= "<if(ctx.provideCopyFrom)>((<ctx.name>)_localctx)<else>_localctx<endif>"

//
used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "Precpred(Context, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>;"
recRuleSetStopToken() ::= "Context.Stop = TokenStream.LT(-1);"

recRuleAltStartAction(ruleName, ctxName, label, isListLabel) ::= <<
_localctx = new <ctxName>Context(_parentctx, _parentState);
<if(label)>
<if(isListLabel)>
_localctx.<label>.Add(_prevctx);
<else>
_localctx.<label> = _prevctx;
<endif>
<endif>
PushNewRecursionContext(_localctx, _startState, RULE_<ruleName>);
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
_localctx = new <currentAltLabel; format="cap">Context(new <ruleName; format="cap">Context(_parentctx,
_parentState));
<if(label)>
<if(isListLabel)>
((<currentAltLabel; format="cap">Context)_localctx).<label>.Add(_prevctx);
<else>

```

```

((<currentAltLabel; format="cap">Context)_localctx).<label> = _prevctx;
<endif>
<endif>
PushNewRecursionContext(_localctx,
startState, RULE<ruleName>);
>>

recRuleReplaceContext(ctxName) ::= <<
_localctx = new <ctxName>Context(_localctx);
Context = _localctx;
_prevctx = _localctx;
>>

recRuleSetPrevCtx() ::= <<
if (ParseListeners!=null)
 TriggerExitRuleEvent();
_prevctx = _localctx;
>>

LexerFile(file, lexer, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
namespace <file.genPackage> {
<endif>
<namedActions.header>
using System;
using System.Text;
using Antlr4.Runtime;
using Antlr4.Runtime.Atn;
using Antlr4.Runtime.Misc;
using DFA = Antlr4.Runtime.Dfa.DFA;

<lexer>
<if(file.genPackage)>
} // namespace <file.genPackage>
<endif>
>>

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<
[System.CodeDom.Compiler.GeneratedCode("ANTLR", "<file.ANTLRVersion>")]
[System.CLSCompliant(false)]
public partial class <csIdentifier.(lexer.name)> : <superClass; null="Lexer"> {
 protected static DFA[] decisionToDFA;
 protected static PredictionContextCache
sharedContextCache = new PredictionContextCache();
 public const int
 <lexer.tokens:{k | <tokenType.(k)>=<lexer.tokens.(k)>}; separator=", ", wrap, anchor>;

```

```

<if(lexer.channels)>
public const int
 <lexer.channels:{k | <csIdentifier.(k)>=<lexer.channels.(k)>}; separator=", ", wrap, anchor>
<endif>
<rest(lexer.modes):{m| public const int <modeName.(m)> = <i>;}; separator="\n">
public static string[] modeNames = {
 <lexer.modes:{m| "<m>"}; separator=", ", wrap, anchor>
};

public static readonly string[] ruleNames = {
 <lexer.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>
};

<namedActions.members>

public <csIdentifier.(lexer.name)>(ICharStream input)
 : base(input)
 {
 Interpreter = new LexerATNSimulator(this, _ATN, decisionToDFA, sharedContextCache);
 }

<vocabulary(lexer.literalNames, lexer.symbolicNames)>

public override string GrammarFileName { get { return "<lexer.grammarFileName>"; } }

public override string[] RuleNames { get { return ruleNames;
} }

public override string[] ModeNames { get { return modeNames; } }

public override string SerializedAtn { get { return _serializedATN; } }

static <csIdentifier.(lexer.name)>() {
 decisionToDFA = new DFA[_ATN.NumberOfDecisions];
 for (int i = 0; i < _ATN.NumberOfDecisions; i++) {
 decisionToDFA[i] = new DFA(_ATN.GetDecisionState(i), i);
 }
}
<dumpActions(lexer, "", actionFuncs, sempredFuncs)>
<atn>
}
>>

SerializedATN(model) ::= <<
private static string _serializedATN = _serializeATN();
private static string _serializeATN()
{

```

```
StringBuilder sb = new StringBuilder();
sb.Append("<model.serialized; wrap={}><\n><\t>sb.Append(">");
return sb.ToString();
}
```

```
public static readonly ATN _ATN =
new ATNDeserializer().Deserialize(_serializedATN.ToCharArray());
```

```
>>
```

```
initValue(typeName) ::= <<
default(<typeName>)
>>
```

```
codeFileExtension() ::= ".cs"
```

```
modeName ::= [
"DEFAULT_MODE" : "DefaultMode",
default : key
]
```

```
channelName ::= [
"HIDDEN" : "Hidden",
"DEFAULT_TOKEN_CHANNEL"
: "DefaultTokenChannel",
default : key
]
```

```
tokenType ::= [
"EOF" : "Eof",
default : key
]
```

```
csIdentifier ::= [
"abstract" : "@abstract",
"as" : "@as",
"base" : "@base",
"bool" : "@bool",
"break" : "@break",
"byte" : "@byte",
"case" : "@case",
"catch" : "@catch",
"char" : "@char",
"checked" : "@checked",
"class" : "@class",
"const" : "@const",
"continue" : "@continue",
```

"decimal" : "@decimal",  
"default" : "@default",  
"delegate" : "@delegate",  
"do" : "@do",  
"double" : "@double",  
"else" : "@else",  
"enum" : "@enum",  
"event" : "@event",  
"explicit" : "@explicit",  
"extern" : "@extern",  
"false" : "@false",  
"finally" : "@finally",  
"fixed" : "@fixed",  
"float" : "@float",  
"for" : "@for",  
"foreach" : "@foreach",  
"goto" : "@goto",  
"if" : "@if",  
"implicit" : "@implicit",  
"in" : "@in",  
"int" : "@int",  
"interface" : "@interface",  
"internal" : "@internal",  
"is" : "@is",  
"lock" : "@lock",  
"long" : "@long",  
"namespace" : "@namespace",  
"new" : "@new",  
"null"  
: "@null",  
"object" : "@object",  
"operator" : "@operator",  
"out" : "@out",  
"override" : "@override",  
"params" : "@params",  
"private" : "@private",  
"protected" : "@protected",  
"public" : "@public",  
"readonly" : "@readonly",  
"ref" : "@ref",  
"return" : "@return",  
"sbyte" : "@sbyte",  
"sealed" : "@sealed",  
"short" : "@short",  
"sizeof" : "@sizeof",  
"stackalloc" : "@stackalloc",  
"static" : "@static",  
"string" : "@string",

```
"struct" : "@struct",
"switch" : "@switch",
"this" : "@this",
"throw" : "@throw",
"true" : "@true",
"try" : "@try",
"typeof" : "@typeof",
"uint" : "@uint",
"ulong" : "@ulong",
"unchecked" : "@unchecked",
"unsafe" : "@unsafe",
"ushort" : "@ushort",
"using" : "@using",
"virtual" : "@virtual",
"void" : "@void",
"volatile" : "@volatile",
"while" : "@while",
default : key
]
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/CSharp/CSharp.stg
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\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ANTLRParser.java

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// File : A3Lexer.g

// Author : Jim Idle (jimi@temporal-wave.com)

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// Version : First implemented as part of ANTLR 3.2 this is the self

// hosting ANTLR 3 Lexer.

//

// Description

```

// -----
// This is the definitive lexer grammar for parsing ANTLR V3.x.x grammars. All other
// grammars are
// derived from this grammar via source code control integration (perforce)
// or by the gdiff tool.
//
// This grammar and its associated grammars A3Parser.g and A3Walker.g exhibit the following
// traits, which are recommended for all production quality grammars:
//
// 1) They are separate grammars, not composite grammars;
// 2) They implement all supporting methods in a superclass (at least this is recommended
// for language targets that support inheritance;
// 3) All errors are pushed as far down the parsing chain as possible, which means
// that the lexer tries to defer error reporting to the parser, and the parser
// tries to defer error reporting to a semantic phase consisting of a single
// walk of the AST. The reason for this is that the error messages produced
// from later phases of the parse will generally have better context and so
// be more useful to the end user. Consider the message: "Syntax error at 'options'"
// vs: "You cannot specify two options{ }
// sections in a single grammar file".
// 4) The lexer is 'programmed' to catch common mistakes such as unterminated literals
// and report them specifically and not just issue confusing lexer mismatch errors.
//
/** Read in an ANTLR grammar and build an AST. Try not to do
 * any actions, just build the tree.
 *
 * The phases are:
 *
 * A3Lexer.g (this file)
 * A3Parser.g
 * A3Verify.g (derived from A3Walker.g)
 * assign.types.g
 * define.g
 * buildnfa.g
 * antlr.print.g (optional)
 * codegen.g
 *
 * Terence Parr
 * University of San Francisco
 * 2005
 * Jim Idle (this v3 grammar)
 * Temporal Wave LLC
 * 2009
 */
lexer grammar ANTLRLexer;

// =====

```



```

// Note that while this grammar does not care about order of constructs
// that don't really matter, such as options before @header etc, it must first
// be parsed by the original v2 parser, before it replaces it. That parser
// does
// care about order of structures. Hence we are constrained by the v2 parser
// for at least the first bootstrap release that causes this parser to replace
// the v2 version.
// =====

// -----
// Options
//
// V3 option directives to tell the tool what we are asking of it for this
// grammar.
//
options {

// Target language is Java, which is the default but being specific
// here as this grammar is also meant as a good example grammar for
// for users.
//
language = Java;

// The super class that this lexer should expect to inherit from, and
// which contains any and all support routines for the lexer. This is
// commented out in this baseline (definitive or normative grammar)
// - see the ANTLR tool implementation for hints on how to use the super
// class
//
//superclass = AbstractA3Lexer;
}

tokens { SEMPRED; TOKEN_REF; RULE_REF; LEXER_CHAR_SET; ARG_ACTION; }

// Include the copyright
// in this source and also the generated source
//
@lexer::header {
/*
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```

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\*/

```
package org.antlr.v4.parse;
import org.antlr.v4.tool.*;
}
```

```
@members {
```

```
public static final int COMMENTS_CHANNEL = 2;
```

```
public CommonTokenStream tokens; // track stream we push to; need for context info
public boolean isLexerRule = false;
```

```
public void grammarError(ErrorType etype, org.antlr.runtime.Token token, Object... args) { }
```

```
/** scan backwards from current point in this.tokens list
```

```
 * looking for the start of the rule or subrule.
```

```
 * Return token or null if for
```

```
some reason we can't find the start.
```

```
*/
```

```
public Token getRuleOrSubruleStartToken() {
```

```
 if (tokens==null) return null;
```

```
 int i = tokens.index();
```

```
 int n = tokens.size();
```

```
 if (i>=n) i = n-1; // seems index == n as we lex
```

```
while (i>=0 && i<n) {
```

```
 int ttype = tokens.get(i).getType();
```

```
if (ttype == LPAREN || ttype == TOKEN_REF || ttype == RULE_REF) {
```

```
 return tokens.get(i);
```

```
 }
```

```
 i--;
```

```
}
```

```

return null;
}
}

// -----
// Comments
//
// ANTLR comments can be multi or single line and we don't care
// which particularly. However we also accept Javadoc style comments
// of the form: /** ... */ and we do take care to distinguish those
// from ordinary multi-line comments
// Note how we guide the lexical PATH because we want to issue a decriptive
// error message in case of a standalone '/' character, which makes no
// sense in ANTLR source code. We also trap unterminated multi-line comments
//
fragment DOC_COMMENT : ;
COMMENT
@init {

// Record the start line
and offsets as if we need to report an
// unterminated comment, then we want to show the start of the comment
// we think is broken, not the end, where people will have to try and work
// it out themselves.
//
int startLine = $line;
int offset = getCharPositionInLine();
}
: // Eat the first character only, then see if we have a comment
// or something silly.
//
'/' // Comment introducer

(
// Single line comment, possibly with embedded src/line directives
// in a similar style to the C pre-processor, allowing generated
// code to refer the programmer back to the original source code
// in case of error.
//
'/'
(
(' $ANTLR')=> ' $ANTLR' SRC
| ~(NLCHARS)*
)

| // Multi-line comment, which may be a documentation comment
// if it starts /** (note that we protect against accidentally
// recognizing a comment /**/

```

as a documentation comment

```
//
'*(
 { input.LA(2) != '/' }?=> '*' { $type = DOC_COMMENT; }
| { true }?=> // Required to cover all alts with predicates
)

// Should we support embedded multiline comments here?
//
(
 // Pick out end of multiline comment and exit the loop
 // if we find it.
 //
 { !(input.LA(1) == '*' && input.LA(2) == '/') }?

 // Anything else other than the non-greedy match of
 // the comment close sequence
 //
 .
)*
(
 // Look for the comment terminator, but if it is accidentally
 // unterminated, then we will hit EOF, which will trigger the
 // epsilon alt and hence we can issue an error message relative
 // to the
start of the unterminated multi-line comment
 //
 '*'

 | // Unterminated comment!
 //
 {
 // ErrorManager.msg(Msg.UNTERMINATED_DOC_COMMENT, startLine, offset, $pos, startLine,
offset, $pos, (Object)null);
 }
)

| // There was nothing that made sense following the opening '/' and so
// we issue an error regarding the malformed comment
//
{
 // TODO: Insert error message relative to comment start
 //
}
)
{
 // We do not wish to pass the comments in to the parser. If you are
 // writing a formatter then you will want to preserve the comments off
```

```

 // channel, but could just skip and save token space if not.
 //
 $channel=COMMENTS_CHANNEL;
}
;

ARG_OR_CHARSET
options {k=1;}
: {isLexerRule}?=> LEXER_CHAR_SET {$type=LEXER_CHAR_SET;}
| {!isLexerRule}?=> ARG_ACTION
{
 $type=ARG_ACTION;
 // Set the token text to our gathered string minus outer []
 String t = $text;
 t = t.substring(1,t.length()-1);
 setText(t);
}
;

fragment
LEXER_CHAR_SET
: '['
 ('\\ ~(\'r'\n')
 | ~(\'r'\n'\[\'])
)*
']'
;

// -----
// Argument specs
//
// Certain argument lists, such as those specifying call parameters
// to a rule invocation, or input parameters to a rule specification
// are contained within square brackets. In the lexer we consume them
// all at once and sort them out later in the grammar analysis.
//
fragment
ARG_ACTION
: '['
 (
 ARG_ACTION

 | ('')=>ACTION_STRING_LITERAL

 | ('\')=>ACTION_CHAR_LITERAL

 | ~('[\'])
)*

```

```

 ']'
;

// -----
// Actions
//
// Other than making sure to distinguish between { and } embedded
// within what we have assumed to be literals
// in the action code, the
// job of the lexer is merely to gather the code within the action
// (delimited by {}) and pass it to the parser as a single token.
// We know that this token will be asked for its text somewhere
// in the upcoming parse, so setting the text here to exclude
// the delimiting {} is no additional overhead.
//
ACTION
: NESTED_ACTION
('?' {$type = SEMPRED;}
((WSNLCHARS* '=>') => WSNLCHARS* '=>' // v3 gated sempred
{
Token t = new CommonToken(input, state.type, state.channel, state.tokenStartCharIndex, getCharIndex()-1);
t.setLine(state.tokenStartLine);
t.setText(state.text);
t.setCharPositionInLine(state.tokenStartCharPositionInLine);
grammarError(ErrorType.V3_GATED_SEMPRED, t);
}
)?
)?
;

// -----
// Action structure
//
// Many language targets use {} as block delimiters and so we
// must recursively match {} delimited blocks to balance the
// braces. Additionally, we must make some assumptions about
// literal
string representation in the target language. We assume
// that they are delimited by ' or " and so consume these
// in their own alts so as not to inadvertently match {}.
// This rule calls itself on matching a {
//
fragment
NESTED_ACTION
@init {

// Record the start line and offsets as if we need to report an

```

```

// unterminated block, then we want to show the start of the comment
// we think is broken, not the end, where people will have to try and work
// it out themselves.
//
int startLine = getLine();
int offset = getCharPositionInLine();
}

: // Action and other blocks start with opening {
//
{'
(
// And now we can match one of a number of embedded
// elements within the action until we find a
// } that balances the opening {. If we do not find
// the balanced } then we will hit EOF and can issue
// an error message about the brace that we believe to
// be mismatched. This won't be foolproof but we will
// be able to at
least report an error against the
// opening brace that we feel is in error and this will
// guide the user to the correction as best we can.
//

// An embedded {} block
//
NESTED_ACTION

|// What appears to be a literal
//
ACTION_CHAR_LITERAL

|// We have assumed that the target language has C/Java
// type comments.
//
COMMENT

|// What appears to be a literal
//
ACTION_STRING_LITERAL

|// What appears to be an escape sequence
//
ACTION_ESC

|// Some other single character that is not
// handled above

```

```

//
~(\\|'""|\'|/|'{'|'})

)*

(
// Correctly balanced closing brace
//
}'

|// Looks like have an imbalanced {} block, report
// with respect to the opening brace.
//
{
// TODO: Report imbalanced {}
System.out.println("Block starting at line
" + startLine + " offset " + (offset+1) + " contains imbalanced {} or is missing a ");
}
)
;

// Keywords
// -----
// keywords used to specify ANTLR v3 grammars. Keywords may not be used as
// labels for rules or in any other context where they would be ambiguous
// with the keyword vs some other identifier
// OPTIONS, TOKENS, and CHANNELS must also consume the opening brace that captures
// their option block, as this is the easiest way to parse it separate
// to an ACTION block, despite it using the same {} delimiters.
//
OPTIONS : 'options' WSNLCHARS* '{' ;
TOKENS_SPEC : 'tokens' WSNLCHARS* '{' ;
CHANNELS : 'channels' WSNLCHARS* '{' ;

IMPORT : 'import' ;
FRAGMENT : 'fragment' ;
LEXER : 'lexer' ;
PARSER : 'parser' ;
GRAMMAR : 'grammar' ;
TREE_GRAMMAR : 'tree' WSNLCHARS* 'grammar' ;
PROTECTED : 'protected' ;
PUBLIC : 'public' ;
;
PRIVATE : 'private' ;
RETURNS : 'returns' ;
LOCALS : 'locals' ;
THROWS : 'throws' ;

```



```

CATCH : 'catch' ;
FINALLY : 'finally' ;
MODE : 'mode' ;

// -----
// Punctuation
//
// Character sequences used as separators, delimiters, operators, etc
//
COLON : ':'
 {
 // scan backwards, looking for a RULE_REF or TOKEN_REF.
 // which would indicate the start of a rule definition.
 // If we see a LPAREN, then it's the start of the subrule.
 // this.tokens is the token string we are pushing into, so
 // just loop backwards looking for a rule definition. Then
 // we set isLexerRule.
 Token t = getRuleOrSubruleStartToken();
 if (t!=null) {
 if (t.getType()==RULE_REF) isLexerRule = false;

 else if (t.getType()==TOKEN_REF) isLexerRule = true;
 // else must be subrule; don't alter context
 }
 }
;
COLONCOLON : '::' ;
COMMA : ',' ;
SEMI : ';' ;
LPAREN : '(' ;
RPAREN : ')' ;
RARROW : '->' ;
LT : '<' ;
GT : '>' ;
ASSIGN : '=' ;
QUESTION : '?' ;
SYNPRED : '=>'
 {
 Token t = new CommonToken(input, state.type, state.channel,
 state.tokenStartCharIndex, getCharIndex()-1);
 t.setLine(state.tokenStartLine);
 t.setText(state.text);
 t.setCharPositionInLine(state.tokenStartCharPositionInLine);
 grammarError(ErrorType.V3_SYNPRED, t);
 $channel=HIDDEN;
 }
;
STAR : '*'

```

```

;
PLUS : '+' ;
PLUS_ASSIGN : '+=' ;
OR : '|' ;
DOLLAR : '$' ;
DOT : '.' ; // can be WILDCARD or DOT in qid or imported rule ref
RANGE : '..' ;
AT : '@' ;
POUND : '#' ;
NOT : '~' ;
RBRACE : '}' ;

```

```
/** Allow unicode rule/token names */
```

```

ID : a=NameStartChar NameChar*
{
 if (Grammar.isTokenName($a.text)) $type = TOKEN_REF;
 else $type = RULE_REF;
}
;

```

```
fragment
```

```

NameChar : NameStartChar
| '0'..'9'
| '_'
| '\u00B7'
| '\u0300'..\u036F'
| '\u203F'..\u2040'
;

```

```
fragment
```

```

NameStartChar
: 'A'..'Z' | 'a'..'z'
| '\u00C0'..\u00D6'
| '\u00D8'..\u00F6'
| '\u00F8'..\u02FF'
| '\u0370'..\u037D'
| '\u037F'..\u1FFF'
| '\u200C'..\u200D'
| '\u2070'..\u218F'
| '\u2C00'..\u2FEF'
| '\u3001'..\uD7FF'
| '\uF900'..\uFDCF'
| '\uFDF0'..\uFEFE'
| '\uFF00'..\uFFFD'
; // ignores | [\u10000-\uEFFFD] ;

```

```
// -----
```

```
// Literals embedded in actions
```

```

//
// Note that we have made the assumption that the language used within
// actions uses the fairly standard " and ' delimiters for literals and
// that within these literals, characters are escaped using the \ character.
// There are some languages which do not conform to this in all cases, such
// as by using /string/ and so on. We will have to deal with such cases if
// if they come up in targets.
//

// Within actions, or other structures that are not part of the ANTLR
// syntax, we may encounter literal characters. Within these, we do
// not want to inadvertently
// match things like '}' and so we eat them
// specifically. While this rule is called CHAR it allows for the fact that
// some languages may use/allow ' as the string delimiter.
//
fragment
ACTION_CHAR_LITERAL
: "\"" ((\\)=>ACTION_ESC | ~"\")* "\""
;

// Within actions, or other structures that are not part of the ANTLR
// syntax, we may encounter literal strings. Within these, we do
// not want to inadvertently match things like '}' and so we eat them
// specifically.
//
fragment
ACTION_STRING_LITERAL
: "\"" ((\\)=>ACTION_ESC | ~"\")* "\""
;

// Within literal strings and characters that are not part of the ANTLR
// syntax, we must allow for escaped character sequences so that we do not
// inadvertently recognize the end of a string or character when the terminating
// delimiter has been escaped.
//
fragment
ACTION_ESC
: "\\" .
;

// -----
// Integer
//
// Obviously (I hope) match an arbitrary long sequence of digits.
//
INT : ('0'..'9')+
;

```

```

// -----
// Source
spec
//
// A fragment rule for picking up information about an originating
// file from which the grammar we are parsing has been generated. This allows
// ANTLR to report errors against the originating file and not the generated
// file.
//
fragment
SRC : 'src' WSCHARS+ file=ACTION_STRING_LITERAL WSCHARS+ line=INT
 {
 // TODO: Add target specific code to change the source file name and current line number
 //
 }
;

// -----
// Literal string
//
// ANTLR makes no distinction between a single character literal and a
// multi-character string. All literals are single quote delimited and
// may contain unicode escape sequences of the form \uxxxx, where x
// is a valid hexadecimal number (as per Java basically).
STRING_LITERAL
: "\"" ((ESC_SEQ | ~("\|\"|\r|\n'))) *
 ("\""
 | // Unterminated string literal
 {
 Token t = new CommonToken(input, state.type, state.channel, state.tokenStartCharIndex,
getCharIndex()-1);
 t.setLine(state.tokenStartLine);
 t.setText(state.text);
 t.setCharacterPositionInLine(state.tokenStartCharPositionInLine);
 grammarError(ErrorType.UNTERMINATED_STRING_LITERAL, t);
 }
)
;

// A valid hex digit specification
//
fragment
HEX_DIGIT : ('0'..'9'|'a'..'f'|'A'..'F') ;

// Any kind of escaped character that we can embed within ANTLR
// literal strings.
//

```

```

fragment
ESC_SEQ
: '\\'
(
 // The standard escaped character set such as tab, newline,
 // etc.
 //
 'b'|'t'|'n'|'f'|'r'|'\"'|'\\'|'\'|'\'

 |// A Java style Unicode escape sequence
 //
 UNICODE_ESC

 |// An illegal escape sequence
 //
 {
 Token t = new CommonToken(input, state.type, state.channel, getCharIndex()-1, getCharIndex());
 t.setText(t.getText());
 t.setLine(input.getLine());

 t.setCharPositionInLine(input.getCharPositionInLine()-1);
 grammarError(ErrorType.INVALID_ESCAPE_SEQUENCE, t);
 }
)
;

```

```

fragment
UNICODE_ESC

@init {

 // Flag to tell us whether we have a valid number of
 // hex digits in the escape sequence
 //
 int hCount = 0;
}

: 'u' // Leadin for unicode escape sequence

 // We now require 4 hex digits. Note though
 // that we accept any number of characters
 // and issue an error if we do not get 4. We cannot
 // use an infinite count such as + because this
 // might consume too many, so we lay out the lexical
 // options and issue an error at the invalid paths.
 //
 (
 (
 HEX_DIGIT { hCount++; }

```

```

 (
 HEX_DIGIT { hCount++; }
 (
 HEX_DIGIT { hCount++; }
 (
 // Four valid hex digits, we are good
 //
 HEX_DIGIT { hCount++; }

 |// Three valid digits
)

 |// Two valid digits
)

 |// One valid digit
)
)
 |// No valid hex digits at all
)

// Now check the digit count and issue an error if we need to
//
{
 if (hCount != 4) {
 Token t = new CommonToken(input, state.type, state.channel, getCharIndex()-3-hCount, getCharIndex()-
1);
 t.setText(t.getText());
 t.setLine(input.getLine());
 t.setCharPositionInLine(input.getCharPositionInLine()-hCount-2);
 grammarError(ErrorType.INVALID_ESCAPE_SEQUENCE, t);
 }
}
;

// -----
// Whitespace
//
// Characters and character constructs that are of no import
// to the parser and are used to make the grammar easier to read
// for humans.
//
WS
: (
 ''
 | '\t'
 | '\r'

```

```

 | '\n'
 | '\f'
)+
 {$channel=HIDDEN;}
;

// A fragment rule for use in recognizing end of line in
// rules like COMMENT.
//
fragment
NLCHARS
: '\n' | '\r'
;

// A fragment rule for recognizing traditional whitespace
// characters within lexer rules.
//
fragment
WSCHARS
: ' ' | '\t' | '\f'
;

// A fragment rule for recognizing both traditional whitespace and
// end of line markers, when we don't care to distinguish but don't
// want any action code going on.
//
fragment
WSNLCHARS
: ' ' | '\t' | '\f' | '\n' | '\r'
;

// This rule allows ANTLR 4 to parse grammars using the UTF-8 encoding with a
// byte order mark. Since this Unicode character doesn't appear as a token
// anywhere else in the grammar, we can simply skip all instances of it without
// problem. This rule will not break usage of \uFEFF inside a LEXER_CHAR_SET or
// STRING_LITERAL.
UnicodeBOM
: '\uFEFF' {skip();}
;

// -----
// Illegal Character
//
// This
// is an illegal character trap which is always the last rule in the
// lexer specification. It matches a single character of any value and being
// the last rule in the file will match when no other rule knows what to do
// about the character. It is reported as an error but is not passed on to the

```

```

// parser. This means that the parser to deal with the gramamr file anyway
// but we will not try to analyse or code generate from a file with lexical
// errors.
//
ERRCHAR
: .
{
 Token t = new CommonToken(input, state.type, state.channel, state.tokenStartCharIndex, getCharIndex()-1);
 t.setLine(state.tokenStartLine);
 t.setText(state.text);
 t.setCharPositionInLine(state.tokenStartCharPositionInLine);
 String msg = getTokenErrorDisplay(t) + " came as a complete surprise to me";
 grammarError(ErrorType.SYNTAX_ERROR, t, msg);
 state.syntaxErrors++;
 skip();
}
;

```

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```

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\*/

tree grammar BlockSetTransformer;

options {

language = Java;

tokenVocab = ANTLRParser;

ASTLabelType = GrammarAST;

output = AST;

filter = true;

}

```

@header {
package org.antlr.v4.parse;
import org.antlr.v4.misc.Utils;
import org.antlr.v4.misc.*;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
import java.util.List;
import java.util.Set;
import
java.util.HashSet;
import java.util.ArrayList;
import org.antlr.v4.runtime.misc.IntervalSet;
}

@members {
public String currentRuleName;
public GrammarAST currentAlt;
public Grammar g;
public BlockSetTransformer(TreeNodeStream input, Grammar g) {
 this(input, new RecognizerSharedState());
 this.g = g;
}
}

topdown
: ^(RULE (id=TOKEN_REF|id=RULE_REF) {currentRuleName=$id.text;} .+)
| setAlt
| ebnfBlockSet
| blockSet
;

setAlt
: {inContext("RULE BLOCK")}?
ALT {currentAlt = $start;}
;

// (BLOCK (ALT (+ (BLOCK (ALT INT) (ALT ID))))))
ebnfBlockSet
@after {
GrammarTransformPipeline.setGrammarPtr(g, $tree);
}
: ^(ebnfSuffix blockSet) -> ^(ebnfSuffix ^(BLOCK<BlockAST> ^(ALT<AltAST> blockSet)))
;

ebnfSuffix
@after {$tree = (GrammarAST)adaptor.dupNode($start);}
: OPTIONAL
| CLOSURE

```

```

| POSITIVE_CLOSURE
;

blockSet
@init {
boolean inLexer = Grammar.isTokenName(currentRuleName);
}
@after {
GrammarTransformPipeline.setGrammarPtr(g, $tree);
}
: {inContext("RULE")}?
// top-level: rule block and > 1 alt
^(BLOCK ^(alt=ALT elementOptions? {((AltAST)$alt).altLabel==null}? setElement[inLexer]) (^(ALT
elementOptions? setElement[inLexer]))+
-> ^(BLOCK<BlockAST>[$BLOCK.token] ^(ALT<AltAST>[$BLOCK.token,"ALT"] ^(SET[$BLOCK.token,
"SET"] setElement+)))
| {!inContext("RULE")}? // if not rule block and > 1 alt
^(BLOCK ^(ALT elementOptions? setElement[inLexer]) (^(ALT elementOptions? setElement[inLexer]))+
-> ^(SET[$BLOCK.token, "SET"] setElement+))
;

setElement[boolean inLexer]
@after {
GrammarTransformPipeline.setGrammarPtr(g, $tree);
}
: (^(a=STRING_LITERAL elementOptions) {!inLexer ||
CharSupport.getCharValueFromGrammarCharLiteral($a.getText())!=-1}?
| a=STRING_LITERAL {!inLexer || CharSupport.getCharValueFromGrammarCharLiteral($a.getText())!=-1}?
| {!inLexer}?=> ^(TOKEN_REF elementOptions)
| {!inLexer}?=> TOKEN_REF
| {!inLexer}?=> ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
{CharSupport.getCharValueFromGrammarCharLiteral($a.getText())!=-1
&&
CharSupport.getCharValueFromGrammarCharLiteral($b.getText())!=-1}?
)
;

elementOptions
: ^(ELEMENT_OPTIONS elementOption*)
;

elementOption
: ID
| ^(ASSIGN id=ID v=ID)
| ^(ASSIGN ID v=STRING_LITERAL)
| ^(ASSIGN ID v=ACTION)
| ^(ASSIGN ID v=INT)
;

```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/parse/BlockSetTransformer.g
```

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```
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```

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```

```
*/
```

```
atn(startState, states, edges, rankdir, decisionRanks, useBox) ::= <<
```

```
digraph ATN {
```

```
rankdir=LR;
```

```
<decisionRanks; separator="\n">
```

```
<states; separator="\n">
```

```
<edges; separator="\n">
```

```
}
```

```
>>
```

```
dfa(name, startState, states, edges, rankdir, decisionRanks, useBox) ::= <<
```

```
digraph <name> {
```

```

<if(rankdir)>rankdir=<rankdir>;<endif>
<decisionRanks; separator="\n">
<states; separator="\n">
<edges;
separator="\n">
}
>>

decision-rank(states) ::= <<
{rank=same; rankdir=TB; <states: {s | s<s>}; separator="; ">}
>>

edge(src,target,label,arrowhead,transitionIndex) ::= <<
<src><if(transitionIndex)>:p<transitionIndex><endif> -> <target> [fontsize=11, fontname="Courier", arrowsize=.7,
label = "<label>"<if(arrowhead)>, arrowhead = <arrowhead><endif>];
>>

action-edge(src,target,label,arrowhead,transitionIndex) ::= <<
<src><if(transitionIndex)>:p<transitionIndex><endif> -> <target> [fontsize=11, fontname="Courier", arrowsize=.7,
label = "<label>"<if(arrowhead)>, arrowhead = <arrowhead><endif>];
>>

epsilon-edge(src,label,target,arrowhead,transitionIndex,loopback=false) ::= <<
<src><if(transitionIndex)>:p<transitionIndex><endif> -> <target> [fontname="Times-Italic",
label="ε"<if(loopback)>, style="dashed"<endif>];
>>

state(state, label, name, transitions) ::= <%
<name>[fontsize=11,
label="
 <! rest(transition) tests for decision states: these nodes have a non-empty
set of transitions after the first one. !>
 <if(rest(transitions))>
 {
 <! Label on the left side of the record node. !>
 <label>
 |
 <! Named ports in order on right side of record node, no display text. !>
 {<transitions: {t|\<p>i0>>}; separator="|">}
 }
 <else>
 <label>
 <endif>
 "
 <if(rest(transitions))>
 , shape=record, fixedsize=false
 <else>
 , shape=circle, fixedsize=true, width=.55
 <endif>

```

```

 , peripheries=1];
%>

stopstate(name,label,actionIndex,useBox) ::= <<
<name>[fontsize=11, label="<label><if(actionIndex)>,\naction:<actionIndex><endif>",
<if(useBox)>shape=polygon,sides=4,peripheries=2,fixedsized=false<else>shape=doublecircle, fixedsized=true,
width=.6<endif>];
>>

```

Found in path(s):

```

* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/dot/graphs.stg

```

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*/

/** Find left-recursive rules */
tree grammar LeftRecursiveRuleWalker;

```

```

options {
 tokenVocab=ANTLRParser;
 ASTLabelType=GrammarAST;
}

@header {
package org.antlr.v4.parse;

import org.antlr.v4.misc.*;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
}

@members {
private String ruleName;
private int currentOuterAltNumber; // which outer alt of rule?
public
int numAlts; // how many alts for this rule total?

public void setAltAssoc(AltAST altTree, int alt) {}
public void binaryAlt(AltAST altTree, int alt) {}
public void prefixAlt(AltAST altTree, int alt) {}
public void suffixAlt(AltAST altTree, int alt) {}
public void otherAlt(AltAST altTree, int alt) {}
public void setReturnValues(GrammarAST t) {}
}

@rulecatch { }

// TODO: can get parser errors for not matching pattern; make them go away
public
rec_rule returns [boolean isLeftRec]
@init
{
 currentOuterAltNumber = 1;
}
: ^(r=RULE id=RULE_REF {ruleName=$id.getText();}
 ruleModifier?
// (ARG_ACTION)? shouldn't allow args, right?
 (^ (RETURNS a=ARG_ACTION {setReturnValues($a);}))?
// (^(THROWS .+)) ? don't allow
 (^(LOCALS ARG_ACTION)) ? // TODO: copy these to gen'd code
 (^(OPTIONS .*))
 | ^(AT ID ACTION) // TODO: copy
)*
ruleBlock { $isLeftRec = $ruleBlock.isLeftRec; }
exceptionGroup
)

```

```

;

exceptionGroup
: exceptionHandler* finallyClause?
;

exceptionHandler
: ^(CATCH ARG_ACTION ACTION)
;

finallyClause
: ^(FINALLY ACTION)
;

ruleModifier
: PUBLIC
| PRIVATE
| PROTECTED
;

ruleBlock returns [boolean isLeftRec]
@init{boolean lr=false; this.numAlts = $start.getChildCount();}
: ^(BLOCK
(
o=outerAlternative
{if ($o.isLeftRec) $isLeftRec = true;}
{currentOuterAltNumber++;}
)+
)
;

/** An alt is either prefix, suffix, binary, or ternary operation or "other" */
outerAlternative returns [boolean isLeftRec]
: (binary)=> binary
 {binaryAlt((AltAST)$start, currentOuterAltNumber); $isLeftRec=true;}
| (prefix)=> prefix
 {prefixAlt((AltAST)$start, currentOuterAltNumber);}
| (suffix)=> suffix
 {suffixAlt((AltAST)$start, currentOuterAltNumber); $isLeftRec=true;}
| nonLeftRecur {otherAlt((AltAST)$start, currentOuterAltNumber);}
;

binary
: ^(
ALT elementOptions? recurse element* recurse epsilonElement*)
 {setAltAssoc((AltAST)$ALT,currentOuterAltNumber);}
;

```



```

prefix
: ^(ALT elementOptions?
 element+
 recurse epsilonElement*
)
 {setAltAssoc((AltAST)$ALT,currentOuterAltNumber);}
;

suffix
: ^(ALT elementOptions? recurse element+)
 {setAltAssoc((AltAST)$ALT,currentOuterAltNumber);}
;

nonLeftRecur
: ^(ALT elementOptions? element+)
;

recurse
: ^(ASSIGN ID recurseNoLabel)
| ^(PLUS_ASSIGN ID recurseNoLabel)
| recurseNoLabel
;

recurseNoLabel : {((CommonTree)input.LT(1)).getText().equals(ruleName)}? RULE_REF;

token returns [GrammarAST t=null]
: ^(ASSIGN ID s=token {$t = $s.t;})
| ^(PLUS_ASSIGN ID s=token {$t = $s.t;})
| b=STRING_LITERAL {$t = $b;}
| ^(b=STRING_LITERAL elementOptions) {$t = $b;}
| ^(c=TOKEN_REF elementOptions) {$t = $c;}
| c=TOKEN_REF {$t = $c;}
;

elementOptions
: ^(ELEMENT_OPTIONS elementOption*)
;

elementOption
: ID
| ^(ASSIGN ID ID)
| ^(ASSIGN ID STRING_LITERAL)
| ^(ASSIGN ID ACTION)
| ^(ASSIGN ID INT)
;

element

```

```
: atom
| ^(NOT element)
| ^(RANGE atom atom)
| ^(ASSIGN ID element)
| ^(PLUS_ASSIGN ID element)
| ^(SET setElement+)
| RULE_REF
| ebnf
| epsilonElement
;
```

epsilonElement

```
: ACTION
| SEMPRED
| EPSILON
| ^(ACTION elementOptions)
| ^(SEMPRED elementOptions)
;
```

setElement

```
: ^(STRING_LITERAL elementOptions)
| ^(TOKEN_REF elementOptions)
| STRING_LITERAL
| TOKEN_REF
;
```

ebnf: block

```
| ^(OPTIONAL block)
| ^(CLOSURE block)
| ^(POSITIVE_CLOSURE block)
;
```

block

```
: ^(BLOCK ACTION? alternative+)
;
```

alternative

```
: ^(ALT elementOptions? element+)
;
```

atom

```
: ^(RULE_REF ARG_ACTION? elementOptions?)
| ^(STRING_LITERAL elementOptions)
| STRING_LITERAL
| ^(TOKEN_REF elementOptions)
| TOKEN_REF
| ^(WILDCARD elementOptions)
| WILDCARD
```

|^(DOT ID element)

;

Found in path(s):

\*

/opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/LeftRecursiveRuleWalker.g

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\*/

/\*\* ANTLR tool checks output templates are compatible with tool code generation.

\* For now, a simple string match used on x.y of x.y.z scheme.

\* Must match Tool.VERSION during load to templates.

\*

\* REQUIRED.

\*/

```

pythonTypeInitMap ::= [
 "bool":"False",
 "int":"0",
 "float":"0.0",
 "str": "",
 default:"None" // anything other
 than a primitive type is an object
]

// args must be <object-model-object>, <fields-resulting-in-STs>

ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
encoding: utf-8
from antlr4 import *
from io import StringIO

<namedActions.header>
<parser>

>>

ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
from antlr4 import *
if __name__ is not None and "." in __name__:
 from <file.parserName> import <file.parserName>
else:
 from <file.parserName> import <file.parserName>
<header>

This class defines a complete listener for a parse tree produced by <file.parserName>.
class <file.grammarName>Listener(ParseTreeListener):

 <file.listenerNames>:{lname |
Enter a parse tree produced by <file.parserName>#<lname>.
def enter<lname; format="cap">(self, ctx:<file.parserName>.<lname; format="cap">Context):
 pass

Exit a parse tree produced by <file.parserName>#<lname>.
def
 exit<lname; format="cap">(self, ctx:<file.parserName>.<lname; format="cap">Context):
 pass

}; separator="\n">

>>

```

```

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
from antlr4 import *
if __name__ is not None and "." in __name__:
 from <file.parserName> import <file.parserName>
else:
 from <file.parserName> import <file.parserName>
<header>

This class defines a complete generic visitor for a parse tree produced by <file.parserName>.

class <file.grammarName>Visitor(ParseTreeVisitor):

 <file.visitorNames: {Iname |
Visit a parse tree produced by <file.parserName>#<Iname>.
def visit<Iname; format="cap">(self, ctx:<file.parserName>.<Iname; format="cap">Context):
 return self.visitChildren(ctx)

}; separator="\n">

del <file.parserName>
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
Generated from <grammarFileName> by ANTLR <ANTLRVersion>
>>

Parser(parser, funcs, atn, sempredFuncs, superClass)
::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
<if(superClass)>
from <superClass> import <superClass>

<endif>
<atn>

class <parser.name> (<if(superClass)><superClass><else>Parser<endif>):

 grammarFileName = "<parser.grammarFileName>"

 atn = ATNDeserializer().deserialize(serializedATN())

 decisionsToDFA = [DFA(ds, i) for i, ds in enumerate(atn.decisionToState)]

```

```

sharedContextCache = PredictionContextCache()

literalNames = [<parser.literalNames:{t | <t>}; null="\\"<INVALID>\\"", separator=", ", wrap, anchor>]

symbolicNames = [<parser.symbolicNames:{t | <t>}; null="\\"<INVALID>\\"", separator=", ", wrap, anchor>]

<parser.rules:{r | RULE_<r.name> = <r.index>}; separator="\n", wrap, anchor>

ruleNames = [<parser.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>]

EOF = <TokenLabelType().EOF
<if(parser.tokens)>
<parser.tokens:{k | <k>=<parser.tokens.(k)>}; separator="\n",
wrap, anchor>
<endif>

<parser:(ctor())>

<namedActions.members>

<funcs; separator="\n">

<if(semPredFuncs)>
def semPred(self, localctx:RuleContext, ruleIndex:int, predIndex:int):
 if self._predicates == None:
 self._predicates = dict()
<parser.semPredFuncs.values:{ f |
 self._predicates[<f.ruleIndex>] = self.<f.name>_semPred }; separator="\n ">
 pred = self._predicates.get(ruleIndex, None)
 if pred is None:
 raise Exception("No predicate with index:" + str(ruleIndex))
 else:
 return pred(localctx, predIndex)

<semPredFuncs.values; separator="\n">
<endif>

>>

dumpActions(recog, argFuncs, actionFuncs, semPredFuncs) ::= <<
<if(actionFuncs)>
def action(self, localctx:RuleContext, ruleIndex:int, actionIndex:int):
 if self._actions is None:
 actions = dict()

```

```

<recog.actionFuncs.values: {f]
 actions[<f.ruleIndex>] = self.<f.name>_action }; separator="\n">
 self._actions = actions
 action
= self._actions.get(ruleIndex, None)
if action is not None:
 action(localctx, actionIndex)
else:
 raise Exception("No registered action for:" + str(ruleIndex))

<actionFuncs.values; separator="\n">

<endif>
<if(sempredFuncs)>
def sempred(self, localctx:RuleContext, ruleIndex:int, predIndex:int):
 if self._predicates is None:
 preds = dict()
<recog.sempredFuncs.values: {f]
 preds[<f.ruleIndex>] = self.<f.name>_sempred}; separator="\n">
 self._predicates = preds
 pred = self._predicates.get(ruleIndex, None)
 if pred is not None:
 return pred(localctx, predIndex)
 else:
 raise Exception("No registered predicate for:" + str(ruleIndex))

<sempredFuncs.values; separator="\n">
<endif>
>>

parser_ctor(p) ::= <<
def __init__(self, input:TokenStream):
 super().__init__(input)
 self.checkVersion("<file.ANTLRVersion>")
 self._interp = ParserATNSimulator(self, self.atn, self.decisionsToDFA, self.sharedContextCache)
 self._predicates
= None

>>

/* This generates a private method since the actionIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleActionFunction(r, actions) ::= <<

def <r.name>_action(self, localctx:<r.ctxType> , actionIndex:int):
<actions: {index|
<if(first(actions))>

```

```

 if actionIndex == <index>:
 <actions.(index)>
<elseif(rest(actions))>
 elif actionIndex == <index>:
 <actions.(index)>
<endif> }; separator="\n">
>>

/* This generates a private method since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleSempredFunction(r, actions) ::= <<
def <r.name>_sempred(self, localctx:<r.ctxType>, predIndex:int):
 <actions:{index|
<if(first(actions))>
 if predIndex == <index>:
 return <actions.(index)>
<elseif(rest(actions))>
 elif predIndex == <index>:
 return <actions.(index)>
<endif> }; separator="\n">

>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<ruleCtx>

<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

def <currentRule.name>(self<currentRule.args:{a | , <a.name><if(a.type)>:<a.type><endif> }>):

 localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, self.state<currentRule.args:{a | , <a.name> }>)
 self.enterRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>)
 <namedActions.init>
 <locals; separator="\n">
 try:
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 <if(exceptions)>
 <exceptions; separator="\n">
 <else>
 except RecognitionException as re:
 localctx.exception = re
 self._errHandler.reportError(self, re)
 self._errHandler.recover(self, re)

```



```

<endif>
finally:
 <finallyAction>
 self.exitRule()
return localctx

>>

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
namedActions,finallyAction,postamble) ::=

<<

<ruleCtx>
<altLabelCtxs:{l
| <altLabelCtxs.l)>}; separator="\n">

def <currentRule.name>(self, _p:int=0<if(currentRule.args)>, <args:{a | , <a>}><endif>):
 _parentctx = self._ctx
 _parentState = self.state
 localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, _parentState<args:{a | , <a.name>}>)>
 _prevctx = localctx
 _startState = <currentRule.startState>
 self.enterRecursionRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>, _p)
 <namedActions.init>
 <locals; separator="\n">
 try:
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 except RecognitionException as re:
 localctx.exception = re
 self._errHandler.reportError(self, re)
 self._errHandler.recover(self, re)
 finally:
 <finallyAction>
 self.unrollRecursionContexts(_parentctx)
 return localctx

>>

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>localctx
= <parser.name>.<currentOuterMostAltCodeBlock.altLabel; format="cap">Context(self, localctx)<endif>
self.enterOuterAlt(localctx, <currentOuterMostAltCodeBlock.alt.altNum>)
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<

```

```
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
>>
```

```
LL1AltBlock(choice, preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
 <alt>
 pass}; separator="\n1">
else:
 <error>

>>
```

```
LL1OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
 <alt>
 pass}; separator="\n1">
else:
 <error>

>>
```

```
LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
if <expr>:
 <alts; separator="\n">

<!else if (!(<followExpr>) <error>!>
>>
```

```
LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
while <loopExpr>:
 <alts; separator="\n">
 self.state = <choice.loopBackStateNumber>
```

```

 self._errHandler.sync(self)
 <iteration>

>>

LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
<preamble; separator="\n">
while True:
 <alts; separator="\n">
 self.state = <choice.stateNumber> <! loopback/exit decision !>
 self._errHandler.sync(self)
 <iteration>
 if not (<loopExpr>):
 break

>>

// LL(*) stuff

AltBlock(choice,
preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ == <i>:
 <alt>
 pass
}; separator="\nel">

>>

OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ == <i><if(!choice.ast.greedy)>+1<endif>:
 <alt>
}; separator="\nel">

>>

StarBlock(choice, alts, sync, iteration) ::= <<

```

```

self.state = <choice.stateNumber>
self._errHandler.sync(self)
_alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
 if _alt==1<if(!choice.ast.greedy)>+1<endif>:
 <iteration>
 <alts> <! should only be one !>
 self.state =
<choice.loopBackStateNumber>
 self._errHandler.sync(self)
 _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)

>>

```

```

PlusBlock(choice, alts, error) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
_alt = 1<if(!choice.ast.greedy)>+1<endif>
while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
 <alts:{alt|
if _alt == <i><if(!choice.ast.greedy)>+1<endif>:
 <alt>
}; separator="\n"|>
 else:
 <error>
 self.state = <choice.loopBackStateNumber> <! loopback/exit decision !>
 self._errHandler.sync(self)
 _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)

>>

```

```

Sync(s) ::= "sync(<s.expecting.name>)"

```

```

ThrowNoViableAlt(t) ::= "raise NoViableAltException(self)"

```

```

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" or ">
>>

```

```

// Java language spec

```

```

15.19 - shift operators mask operands rather than overflow to 0... need range test

```

```

testShiftInRange(shiftAmount) ::= <<

```

```

((<shiftAmount>) & ~0x3f) == 0

```

```

>>

```

```

// produces smaller bytecode only when bits.ttypes contains more than two items

```

```

bitsetBitfieldComparison(s, bits) ::= <%

```

```
(<testShiftInRange({ <offsetShiftVar(s.varName, bits.shift)> })> and ((1 \<< <offsetShiftVar(s.varName, bits.shift)>) & (<bits.ttypes:{ ttype | (1 \<< <offsetShiftType(ttype, bits.shift)>)}; separator=" | ">)) != 0)
%>
```

```
isZero ::= [
"0":true,
default:false
]
```

```
offsetShiftVar(shiftAmount, offset) ::= <%
<if(!isZero(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>
```

```
offsetShiftType(shiftAmount, offset) ::= <%
<if(!isZero(offset))><parser.name>.<shiftAmount> - <offset><else><parser.name>.<shiftAmount><endif>
%>
```

```
// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes: { ttype | <s.varName>==<parser.name>.<ttype> }; separator="
or ">
%>
```

```
cases(ttypes) ::= <<
if token in [<ttypes: { t | <parser.name>.<t> }; separator=" , ">]:
>>
```

```
InvokeRule(r, argExprsChunks) ::= <<
self.state = <r.stateNumber>
<if(r.labels)><r.labels: { l | <labelref(l)> =
}><endif>self.<r.name><(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)><endif><endif><argExprsChu
nks>)
>>
```

```
MatchToken(m) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels: { l | <labelref(l)> = }><endif>self.match(<parser.name>.<m.name>)
>>
```

```
MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"
```

```
MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"
```

```
CommonSetStuff(m, expr, capture, invert) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels: { l | <labelref(l)> = }>self._input.LT(1)<endif>
<capture>
<if(invert)>if <m.varName> \<= 0 or <expr><else>if not(<expr>)<endif>:

```

```

<if(m.labels)><m.labels:{1 | <labelref(l)> = }><else> <endif>self._errHandler.recoverInline(self)
else:
 self._errHandler.reportMatch(self)
 self.consume()
>>

Wildcard(w) ::= <<
self.state = <w.stateNumber>
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>self.matchWildcard()
>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

SemPred(p, chunks, failChunks) ::= <<
self.state = <p.stateNumber>
if not <chunks>:
 from antlr4.error.Errors import FailedPredicateException
 raise FailedPredicateException(self, <p.predicate><if(failChunks)>, <failChunks><elseif(p.msg)>,
<p.msg><endif>)
>>

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
 <catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "skip()"
LexerMoreCommand() ::= "more()"
LexerPopModeCommand() ::= "popMode()"

LexerTypeCommand(arg, grammar) ::= "_type = <arg>"
LexerChannelCommand(arg, grammar) ::= "_channel = <arg>"
LexerModeCommand(arg, grammar) ::= "_mode = <arg>"
LexerPushModeCommand(arg, grammar) ::= "pushMode(<arg>)"

ActionText(t)
 ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "localctx.<a.name>"
LocalRef(a) ::= "localctx.<a.name>"
RetValRef(a) ::= "localctx.<a.name>"

```

```

QRetValueRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

TokenPropertyRef_text(t) ::= "(None if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.text)"
TokenPropertyRef_type(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.type()"
TokenPropertyRef_line(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.line)"
TokenPropertyRef_pos(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.column)"
TokenPropertyRef_channel(t) ::= "(0 if (<ctx(t)>.<t.label> is
None else <ctx(t)>.<t.label>.channel)"
TokenPropertyRef_index(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.tokenIndex)"
TokenPropertyRef_int(t) ::= "(0 if <ctx(t)>.<t.label> is None else int(<ctx(t)>.<t.label>.text))"

RulePropertyRef_start(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.start)"
RulePropertyRef_stop(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.stop)"
RulePropertyRef_text(r) ::= "(None if <ctx(r)>.<r.label> is None else
self._input.getText((<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop)))"
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "self"

ThisRulePropertyRef_start(r) ::= "localctx.start"
ThisRulePropertyRef_stop(r) ::= "localctx.stop"
ThisRulePropertyRef_text(r) ::= "self._input.getText((localctx.start, self._input.LT(-1)))"
ThisRulePropertyRef_ctx(r) ::= "localctx"
ThisRulePropertyRef_parser(r) ::= "self"

NonLocalAttrRef(s) ::= "getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s,
rhsChunks) ::= "getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.append(<labelref(a.label)>)"

TokenDecl(t) ::= "self.<t.name> = None # <TokenLabelType()>"
TokenTypeDecl(t) ::= "self.<t.name> = 0 # <TokenLabelType()> type"
TokenListDecl(t) ::= "self.<t.name> = list() # of <TokenLabelType()>s"
RuleContextDecl(r) ::= "self.<r.name> = None # <r.ctxName>"
RuleContextListDecl(rdecl) ::= "self.<rdecl.name> = list() # of <rdecl.ctxName>s"

ContextTokenGetterDecl(t) ::= <<
def <t.name>(self):
 return self.getToken(<parser.name>.<t.name>, 0)
>>

```

```

// should never be called
ContextTokenListGetterDecl(t) ::= <<
def <t.name>_list(self):
 return self.getTokens(<parser.name>.<t.name>)
>>

ContextTokenListIndexedGetterDecl(t) ::= <<
def <t.name>(self, i:int=None):
 if i is None:
 return self.getTokens(<parser.name>.<t.name>)
 else:
 return self.getToken(<parser.name>.<t.name>,
 i)
>>

ContextRuleGetterDecl(r) ::= <<
def <r.name>(self):
 return self.getTypedRuleContext(<parser.name>.<r.ctxName>,0)
>>

// should never be called
ContextRuleListGetterDecl(r) ::= <<
def <r.name>_list(self):
 return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)
>>

ContextRuleListIndexedGetterDecl(r) ::= <<
def <r.name>(self, i:int=None):
 if i is None:
 return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)
 else:
 return self.getTypedRuleContext(<parser.name>.<r.ctxName>,i)
>>

LexerRuleContext() ::= "RuleContext"

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenName>"
ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"

```



```

ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = self._input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = self._input.LA(1)"

StructDecl(struct,ctorAttrs,attrs,getters,dispatchMethods,interfaces,extensionMembers)
 ::= <<
class <struct.name>(<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif>):

 def __init__(self, parser, parent:ParserRuleContext=None, invokingState:int=-1<struct.ctorAttrs:{ a | ,
<a.name><if(a.type)>:<a.type><endif>=None }>):
 super().__init__(parent, invokingState)
 self.parser = parser
 <attrs:{ a | <a>}; separator="\n">
 <struct.ctorAttrs:{ a | self.<a.name> = <a.name>}; separator="\n">

 <getters:{ g | <g>}; separator="\n\n">

 def getRuleIndex(self):
 return <parser.name>.RULE_<struct.derivedFromName>

<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>
 def copyFrom(self, ctx:ParserRuleContext):
 super().copyFrom(ctx)
 <struct.attrs:{ a | self.<a.name> = ctx.<a.name>}; separator="\n">

<endif>
 <dispatchMethods; separator="\n">
 <extensionMembers; separator="\n">

>>

AltLabelStructDecl(struct,attrs,getters,dispatchMethods)
 ::= <<
class <struct.name>(<currentRule.name; format="cap">Context):

 def __init__(self, parser, ctx:ParserRuleContext): # actually a <parser.name>.<currentRule.name;
format="cap">Context
 super().__init__(parser)
 <attrs:{ a | <a>}; separator="\n">
 self.copyFrom(ctx)

 <getters:{ g | <g>}; separator="\n">

 <dispatchMethods; separator="\n">

>>

```

```

ListenerDispatchMethod(method) ::= <<
def <if(method.isEnter)>enter<else>exit<endif>Rule(self, listener:ParseTreeListener):
 if hasattr(listener, "<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format="cap">"):
 listener.<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format="cap">(self)

>>

VisitorDispatchMethod(method) ::= <<
def accept(self, visitor:ParseTreeVisitor):
 if hasattr(visitor, "visit<struct.derivedFromName; format="cap">"):
 return visitor.visit<struct.derivedFromName; format="cap">(self)
 else:
 return visitor.visitChildren(self)

>>

AttributeDecl(d) ::= "self.<d.name> = <if(d.initValue)><d.initValue><else>None<endif>"

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>localctx.<endif><x.name>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "localctx"

// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "self.precpred(self._ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>"
recRuleSetStopToken() ::= "self._ctx.stop = self._input.LT(-1)"

recRuleAltStartAction(ruleName, ctxName, label) ::= <<
localctx = <parser.name>.<ctxName>Context(self, _parentctx, _parentState)
<if(label)>localctx.<label> = _prevctx<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
localctx = <parser.name>.<currentAltLabel>;
format="cap">Context(self, <parser.name>.<ruleName; format="cap">Context(self, _parentctx, _parentState))
<if(label)>
<if(isListLabel)>
localctx.<label>.append(_prevctx)
<else>
localctx.<label> = _prevctx
<endif>
<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

```

```

recRuleReplaceContext(ctxName) ::= <<
localctx = <parser.name>.<ctxName>Context(self, localctx)
self._ctx = localctx
_prevctx = localctx
>>

```

```

recRuleSetPrevCtx() ::= <<
if self._parseListeners is not None:
 self.triggerExitRuleEvent()
_prevctx = localctx
>>

```

```

LexerFile(lexerFile, lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
from antlr4 import *
from io import StringIO

```

```

<namedActions.header>

```

```

<lexer>
>>

```

```

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<

```

```

<atn>

```

```

class <lexer.name>(<if(superClass)><superClass><else>Lexer<endif>):

```

```

 atn = ATNDeserializer().deserialize(serializedATN())

```

```

 decisionsToDFA = [
DFA(ds, i) for i, ds in enumerate(atn.decisionToState)]

```

```

 <rest(lexer.modes):{m| <m> = <i>}; separator="\n">

```

```

 <lexer.tokens:{k | <k> = <lexer.tokens.(k)>}; separator="\n", wrap, anchor>

```

```

 modeNames = [<lexer.modes:{m| "<m>"}; separator=", ", wrap, anchor>]

```

```

 literalNames = ["\<INVALID>",
 <lexer.literalNames:{t | <t>}; separator=", ", wrap, anchor>]

```

```

 symbolicNames = ["\<INVALID>",
 <lexer.symbolicNames:{t | <t>}; separator=", ", wrap, anchor>]

```

```

 ruleNames = [<lexer.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>]

```

```

grammarFileName = "<lexer.grammarFileName>"

def __init__(self, input=None):
 super().__init__(input)
 self.checkVersion("<lexerFile.ANTLRVersion>")
 self._interp = LexerATNSimulator(self, self.atn, self.decisionsToDFA, PredictionContextCache())
 self._actions = None
 self._predicates = None

<namedActions.members>

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>

>>

SerializedATN(model)
::= <<
<! only one segment, can be inlined !>

def serializedATN():
 with StringIO() as buf:
 buf.write("<model.serialized; wrap={ }<\n> buf.write(" }>")
 return buf.getvalue()

>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>

codeFileExtension() ::= ".py"

Found in path(s):
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/Python3/Python3.stg
No license file was found, but licenses were detected in source scan.

/*
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 *
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```

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 \*/

```
javaTypeInitMap ::= [
 "int":"0",
 "long":"0",
 "float":"0.0f",
 "double":"0.0",
 "boolean":"false",
 "byte":"0",
 "short":"0",
 "char":"0",
 default:"null" // anything other than a primitive type is an object
]
```

// args must be <object-model-object>, <fields-resulting-in-STs>

```
ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName,
file.ANTLRVersion)>
<if(file.genPackage)>
package <file.genPackage>;
<endif>
<namedActions.header>
import org.antlr.v4.runtime.atn.*;
import org.antlr.v4.runtime.dfa.DFA;
import org.antlr.v4.runtime.*;
import org.antlr.v4.runtime.misc.*;
```

```

import org.antlr.v4.runtime.tree.*;
import java.util.List;
import java.util.Iterator;
import java.util.ArrayList;

<parser>
>>

ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
package <file.genPackage>;
<endif>
<header>
import org.antlr.v4.runtime.tree.ParseTreeListener;

/**
 * This interface defines a complete listener for a parse tree produced by
 * { @link <file.parserName> }.
 */
public interface <file.grammarName>Listener extends ParseTreeListener {
 <file.listenerNames: {lname |
/**
<if(file.listenerLabelRuleNames.(lname))>
 * Enter a parse tree produced by the { @code <lname>\}
 * labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.(lname)>\}.
<else>
 * Enter a parse tree produced by { @link <file.parserName>#<lname>\}.
<endif>
 * @param ctx the parse tree
 */
void enter<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx);
/**
<if(file.listenerLabelRuleNames.(lname))>
 * Exit a parse tree produced by the { @code <lname>\}
 * labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.(lname)>\}.
<else>
 * Exit a parse tree produced by { @link <file.parserName>#<lname>\}.
<endif>
 * @param ctx the parse tree
 */
void exit<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx);}; separator="\n">
}
>>

BaseListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>

```

```

package <file.genPackage>;
<endif>
<header>

import org.antlr.v4.runtime.ParserRuleContext;
import org.antlr.v4.runtime.tree.ErrorNode;
import org.antlr.v4.runtime.tree.TerminalNode;

/**
 * This class provides an empty implementation of { @link <file.grammarName>Listener },
 * which can be extended to create a listener which only needs to handle a subset
 * of the available methods.
 */
public class <file.grammarName>BaseListener implements <file.grammarName>Listener {
 <file.listenerNames: {Iname |
/**
 * { @inheritDoc\}
 *
 * \<p>The default implementation does nothing.\</p>
 */
 @Override public void enter<Iname; format="cap">(<file.parserName>.<Iname; format="cap">Context ctx) { \}
/**
 * { @inheritDoc\}
 *
 * \<p>The default implementation does nothing.\</p>
 */
 @Override public void exit<Iname; format="cap">(<file.parserName>.<Iname; format="cap">Context ctx) { \} };
 separator="\n">

/**
 * { @inheritDoc\}
 *
 * \<p>The default implementation does nothing.\</p>
 */
 @Override public void enterEveryRule(ParserRuleContext ctx) { }
/**
 * { @inheritDoc\}
 *
 * \<p>The default implementation does nothing.\</p>
 */
 @Override public void exitEveryRule(ParserRuleContext ctx) { }
/**
 * { @inheritDoc\}
 *
 * \<p>The default
 implementation does nothing.\</p>
 */
 @Override public void visitTerminal(TerminalNode node) { }

```

```

/**
 * {@inheritDoc\}
 *
 * \<p>The default implementation does nothing.\</p>
 */
@Override public void visitErrorNode(ErrorNode node) { }
}
>>

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
package <file.genPackage>;
<endif>
<header>
import org.antlr.v4.runtime.tree.ParseTreeVisitor;

/**
 * This interface defines a complete generic visitor for a parse tree produced
 * by { @link <file.parserName> }.
 *
 * @param \<T> The return type of the visit operation. Use { @link Void } for
 * operations with no return type.
 */
public interface <file.grammarName>Visitor\<T> extends ParseTreeVisitor\<T> {
 <file.visitorNames:{ lname |
/**
<if(file.visitorLabelRuleNames.(lname))>
 * Visit a parse tree produced by the { @code <lname>}
 * labeled alternative in { @link <file.parserName>#<file.visitorLabelRuleNames.(lname)>}|.
<else>
 * Visit a parse tree produced by { @link <file.parserName>#<lname>}|.
<endif>
 * @param ctx the parse tree
 * @return the visitor result
 */
 T visit<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx);}; separator="\n">
 }
>>

BaseVisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
package <file.genPackage>;
<endif>
<header>
import org.antlr.v4.runtime.tree.AbstractParseTreeVisitor;

```



```

/**
 * This class provides an empty implementation of { @link <file.grammarName>Visitor},
 * which can be extended to create a visitor which only needs to handle a subset
 * of the available methods.
 *
 * @param \<T> The return type of the visit operation. Use { @link Void} for
 * operations with no return type.
 */
public class <file.grammarName>BaseVisitor<T> extends AbstractParseTreeVisitor<T> implements
<file.grammarName>Visitor<T> {
 <file.visitorNames:{lname |
/**
 * { @inheritDoc\}
 *
 * \<p>The default
 * implementation returns the result of calling
 * { @link #visitChildren\} on { @code ctx\}.\</p>
 */
 @Override public T visit<lname; format="cap">(<file.parserName>.<lname; format="cap">Context ctx) { return
 visitChildren(ctx); \} }; separator="\n">
 }
 >>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
// Generated from <grammarFileName; format="java-escape"> by ANTLR <ANTLRVersion>
>>

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
@SuppressWarnings({"all", "warnings", "unchecked", "unused", "cast"})
public class <parser.name> extends <superClass; null="Parser"> {
 static { RuntimeMetaData.checkVersion("<file.ANTLRVersion>", RuntimeMetaData.VERSION); }

 protected static final DFA[] _decisionToDFA;
 protected static final PredictionContextCache _sharedContextCache =
 new PredictionContextCache();
 <if(parser.tokens)>
 public static final int
 <parser.tokens:{k | <k>=<parser.tokens.(k)>};
 separator=", ", wrap, anchor>;
 <endif>
 public static final int
 <parser.rules:{r | RULE_<r.name> = <r.index>}; separator=", ", wrap, anchor>;
 public static final String[] ruleNames = {
 <parser.ruleNames:{r | "<r">}; separator=", ", wrap, anchor>

```

```

};

<vocabulary(parser.literalNames, parser.symbolicNames)>

@Override
public String getGrammarFileName() { return "<parser.grammarFileName; format="java-escape">"; }

@Override
public String[] getRuleNames() { return ruleNames; }

@Override
public String getSerializedATN() { return _serializedATN; }

@Override
public ATN getATN() { return _ATN; }

<namedActions.members>
<parser:(ctor)()>
<funcs; separator="\n">

<if(sempredFuncs)>
public boolean sempred(RuleContext _localctx, int ruleIndex, int predIndex) {
 switch (ruleIndex) {
 <parser.sempredFuncs.values:{f}
case <f.ruleIndex>:
return <f.name>_sempred((<f.ctxType>)_localctx, predIndex);}; separator="\n">
 }
 return true;
 }
 <sempredFuncs.values;
separator="\n">
<endif>

<atn>
}
>>

vocabulary(literalNames, symbolicNames) ::= <<
private static final String[] _LITERAL_NAMES = {
 <literalNames:{t | <t>}; null="null", separator=", ", wrap, anchor>
};
private static final String[] _SYMBOLIC_NAMES = {
 <symbolicNames:{t | <t>}; null="null", separator=", ", wrap, anchor>
};
public static final Vocabulary VOCABULARY = new VocabularyImpl(_LITERAL_NAMES,
 _SYMBOLIC_NAMES);

/**

```

```

* @deprecated Use {@link #VOCABULARY} instead.
*/
@Deprecated
public static final String[] tokenNames;
static {
 tokenNames = new String[_SYMBOLIC_NAMES.length];
 for (int i = 0; i < tokenNames.length; i++) {
 tokenNames[i] = VOCABULARY.getLiteralName(i);
 if (tokenNames[i] == null) {
 tokenNames[i] = VOCABULARY.getSymbolicName(i);
 }

 if (tokenNames[i] == null) {
 tokenNames[i] = "<INVALID>";
 }
 }
}

@Override
@Deprecated
public String[] getTokenNames() {
 return tokenNames;
}

@Override

public Vocabulary getVocabulary() {
 return VOCABULARY;
}
>>

dumpActions(recog,
 argFuncs, actionFuncs, sempredFuncs) ::= <<
<if(actionFuncs)>
@Override
public void action(RuleContext _localctx, int ruleIndex, int actionIndex) {
 switch (ruleIndex) {
 <recog.actionFuncs.values: {f}
 case <f.ruleIndex>:
 <f.name>_action((<f.ctxType>)_localctx, actionIndex);
 break;}; separator="\n">
 }
}
<actionFuncs.values; separator="\n">
<endif>
<if(sempredFuncs)>
@Override
public boolean sempred(RuleContext _localctx, int ruleIndex, int predIndex) {

```

```

switch (ruleIndex) {
<recog.sempredFuncs.values:{f|
case <f.ruleIndex>:
return <f.name>_sempred((<f.ctxType>)_localctx, predIndex);}; separator="\n">
}
return true;
}
<sempredFuncs.values; separator="\n">
<endif>
>>

```

```

parser_ctor(p) ::= <<
public <p.name>(TokenStream input) {
super(input);
_interp = new ParserATNSimulator(this,_ATN,_decisionToDFA,_sharedContextCache);
}
>>

```

/\* This generates a private method since the actionIndex is generated, making an  
\* overriding implementation impossible to maintain.  
\*/

```

RuleActionFunction(r, actions) ::= <<
private void <r.name>_action(<r.ctxType> _localctx, int actionIndex) {
switch (actionIndex) {
<actions:{index|
case <index>:
<actions.(index)>
break;}; separator="\n">
}
}
>>

```

/\* This generates a private method since the predIndex is generated, making an  
\* overriding implementation impossible to maintain.  
\*/

```

RuleSempredFunction(r, actions) ::= <<
private boolean <r.name>_sempred(<r.ctxType> _localctx, int predIndex) {
switch (predIndex) {
<actions:{index|
case <index>:
return <actions.(index)>;}; separator="\n">
}
return true;
}
>>

```

```

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

```

```

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public final <endif><currentRule.ctxType>
<currentRule.name><(<args; separator=", ">) throws RecognitionException {
 <currentRule.ctxType> _localctx = new
 <currentRule.ctxType>(_ctx, getState(<currentRule.args:{a | , <a.name>}>));
 enterRule(_localctx, <currentRule.startState>, RULE_<currentRule.name>);
 <namedActions.init>
 <locals; separator="\n">
 try {
 <if(currentRule.hasLookaheadBlock)>
 int _alt;
 <endif>
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 }
 <if(exceptions)>
 <exceptions; separator="\n">
 <else>
 catch (RecognitionException re) {
 _localctx.exception = re;
 _errHandler.reportError(this, re);
 _errHandler.recover(this, re);
 }
 <endif>
 finally {
 <finallyAction>
 exitRule();
 }
 return _localctx;
 }
 >>

```

```

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
 namedActions,finallyAction,postamble) ::=
<<

```

```

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public final <endif><currentRule.ctxType>
<currentRule.name><(<args; separator=", ">) throws RecognitionException {
 return <currentRule.name>(<0<currentRule.args:{a
 | , <a.name>}>);
 }

```

```

private <currentRule.ctxType> <currentRule.name>(int _p<args:{a | , <a>}>) throws RecognitionException {
 ParserRuleContext _parentctx = _ctx;
 int _parentState = getState();
 <currentRule.ctxType> _localctx = new <currentRule.ctxType>(_ctx, _parentState<currentRule.args:{a | ,
<a.name>}>);
 <currentRule.ctxType> _prevctx = _localctx;
 int _startState = <currentRule.startState>;
 enterRecursionRule(_localctx, <currentRule.startState>, RULE_<currentRule.name>, _p);
 <namedActions.init>
 <locals; separator="\n">
 try {
 <if(currentRule.hasLookaheadBlock)>
 int _alt;
 <endif>
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 }
 catch (RecognitionException re) {
 _localctx.exception = re;
 _errHandler.reportError(this, re);
 _errHandler.recover(this, re);
 }
 finally {
 <finallyAction>
 unrollRecursionContexts(_parentctx);
 }
 return _localctx;
}
>>

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::=

```

<<
<if(currentOuterMostAltCodeBlock.altLabel)>_localctx = new <currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(_localctx);<endif>
enterOuterAlt(_localctx, <currentOuterMostAltCodeBlock.alt.altNum>);
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<

```

{
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
}
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<if(choice.label)><labelref(choice.label)> = _input.LT(1);<endif>
<preamble; separator="\n">
switch (_input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlock(choice, alts, error) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
switch (_input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlockSingleAlt(choice,
expr, alts, preamble, error, followExpr) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<preamble; separator="\n">
if (<expr>) {
<alts; separator="\n">
}
<!else if (!(<followExpr>)) <error!>
>>

```

```

LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<preamble; separator="\n">
while (<loopExpr>) {
<alts; separator="\n">
setState(<choice.loopBackStateNumber>);
_errHandler.sync(this);
<iteration>
}
>>

```

```

LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
setState(<choice.blockStartStateNumber>); <! alt block decision !>
_errHandler.sync(this);
<preamble; separator="\n">
do {
<alts; separator="\n">
setState(<choice.stateNumber>); <! loopback/exit decision !>
_errHandler.sync(this);
<iteration>
} while (<loopExpr>);
>>

```

```
// LL(*) stuff
```

```

AltBlock(choice, preamble, alts, error) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
<if(choice.label)><labelref(choice.label)>
= _input.LT(1);<endif>
<preamble; separator="\n">
switch (getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)) {
<alts:{ alt |
case <i>:
<alt>
break;}; separator="\n">
}
>>

```

```

OptionalBlock(choice, alts, error) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
switch (getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)) {
<alts:{ alt |
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break;}; separator="\n">
}
>>

```

```

StarBlock(choice, alts, sync, iteration) ::= <<
setState(<choice.stateNumber>);
_errHandler.sync(this);
_alt = getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx);
while (_alt!=<choice.exitAlt> && _alt!=org.antlr.v4.runtime.atn.ATN.INVALID_ALT_NUMBER) {
if (_alt==1<if(!choice.ast.greedy)>+1<endif>) {
<iteration>
<alts> <! should only be one !>

```



```

}
setState(<choice.loopBackStateNumber>);
_errHandler.sync(this);
_alt = getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx);
}
>>

```

```

PlusBlock(choice,
alts, error) ::= <<
setState(<choice.blockStartStateNumber>); <! alt block decision !>
_errHandler.sync(this);
_alt = 1<if(!choice.ast.greedy)>+1<endif>;
do {
switch (_alt) {
<alts:{alt|
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break;}; separator="\n">
default:
<error>
}
setState(<choice.loopBackStateNumber>); <! loopback/exit decision !>
_errHandler.sync(this);
_alt = getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx);
} while (_alt!=<choice.exitAlt> && _alt!=org.antlr.v4.runtime.atn.ATN.INVALID_ALT_NUMBER);
>>

```

```

Sync(s) ::= "sync(<s.expecting.name>);"

```

```

ThrowNoViableAlt(t) ::= "throw new NoViableAltException(this);"

```

```

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" || ">
>>

```

```

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount)
::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

```

```

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange({ <offsetShift(s.varName, bits.shift)>})> && ((1L \<< <offsetShift(s.varName, bits.shift)>) &
<bits.ttypes:{ttype | (1L \<< <offsetShift(ttype, bits.shift)>)}; separator=" | ">)) != 0)
%>

```

```

isZero ::= [
"0":true,
default:false
]

offsetShift(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes: { ttype | <s.varName>==<ttype> }; separator=" || ">
%>

cases(ttypes) ::= <<
<ttypes: { t | case <t> }; separator="\n">
>>

InvokeRule(r, argExprsChunks) ::= <<
setState(<r.stateNumber>);
<if(r.labels)><r.labels: {1 | <labelref(l)> =
}><endif><r.name>(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>,<endif><endif><argExprsChunks>
);
>>

MatchToken(m)
::= <<
setState(<m.stateNumber>);
<if(m.labels)><m.labels: {1 | <labelref(l)> = }><endif>match(<m.name>);
>>

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

CommonSetStuff(m, expr, capture, invert) ::= <<
setState(<m.stateNumber>);
<if(m.labels)><m.labels: {1 | <labelref(l)> = }>_input.LT(1);<endif>
<capture>
if (<if(invert)><m.varName> \<= 0 || <else>!<endif>(<expr>)) {
<if(m.labels)><m.labels: {1 | <labelref(l)> = (Token)}><endif>_errHandler.recoverInline(this);
}
else {
if (_input.LA(1)==Token.EOF) matchedEOF = true;
_errHandler.reportMatch(this);
consume();
}
>>

```

```

Wildcard(w) ::= <<
setState(<w.stateNumber>);
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>matchWildcard();
>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

SemPred(p, chunks, failChunks) ::= <<
setState(<p.stateNumber>);
if
 (!(<chunks>)) throw new FailedPredicateException(this, <p.predicate><if(failChunks)>,
 <failChunks><elseif(p.msg)>, <p.msg><endif>);
>>

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
 <catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "skip();"
LexerMoreCommand() ::= "more();"
LexerPopModeCommand() ::= "popMode();"

LexerTypeCommand(arg, grammar) ::= "_type = <arg>";
LexerChannelCommand(arg, grammar) ::= "_channel = <arg>";
LexerModeCommand(arg, grammar) ::= "_mode = <arg>";
LexerPushModeCommand(arg, grammar) ::= "pushMode(<arg>);"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "_localctx.<a.name>"
LocalRef(a) ::= "_localctx.<a.name>"
RetValRef(a) ::= "_localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks)

```

```

::= "<ctx(s)>.<s.name> = <rhsChunks>";

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

TokenPropertyRef_text(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getText():null)"
TokenPropertyRef_type(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getType():0)"
TokenPropertyRef_line(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getLine():0)"
TokenPropertyRef_pos(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getCharPositionInLine():0)"
TokenPropertyRef_channel(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getChannel():0)"
TokenPropertyRef_index(t) ::= "<ctx(t)>.<t.label>!=null?<ctx(t)>.<t.label>.getTokenIndex():0)"
TokenPropertyRef_int(t) ::= "<ctx(t)>.<t.label>!=null?Integer.valueOf(<ctx(t)>.<t.label>.getText():0)"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label>!=null?<ctx(r)>.<r.label>.start):null)"
RulePropertyRef_stop(r) ::= "<ctx(r)>.<r.label>!=null?<ctx(r)>.<r.label>.stop):null)"
RulePropertyRef_text(r)
::= "<ctx(r)>.<r.label>!=null?_input.getText(<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop):null)"
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "this"

ThisRulePropertyRef_start(r) ::= "_localctx.start"
ThisRulePropertyRef_stop(r) ::= "_localctx.stop"
ThisRulePropertyRef_text(r) ::= "_input.getText(_localctx.start, _input.LT(-1))"
ThisRulePropertyRef_ctx(r) ::= "_localctx"
ThisRulePropertyRef_parser(r) ::= "this"

NonLocalAttrRef(s) ::= "((<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>)).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::=
"((<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>)).<s.name> = <rhsChunks>";

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.add(<labelref(a.label)>);"

TokenDecl(t) ::= "<TokenLabelType()> <t.name>"
TokenTypeDecl(t) ::= "int <t.name>";
TokenListDecl(t) ::= "List<Token> <t.name> = new ArrayList<Token>()"
RuleContextDecl(r)
::= "<r.ctxName> <r.name>"
RuleContextListDecl(rdecl) ::= "List<<rdecl.ctxName>> <rdecl.name> = new ArrayList<<rdecl.ctxName>>()"

ContextTokenGetterDecl(t) ::=
"public TerminalNode <t.name>() { return getToken(<parser.name>.<t.name>, 0); }"
ContextTokenListGetterDecl(t) ::=
"public List<TerminalNode> <t.name>() { return getTokens(<parser.name>.<t.name>); }"
ContextTokenListIndexedGetterDecl(t) ::= <<
public TerminalNode <t.name>(int i) {
return getToken(<parser.name>.<t.name>, i);
}
>>

```

```

ContextRuleGetterDecl(r) ::= <<
public <r.ctxName> <r.name>() {
 return getRuleContext(<r.ctxName>.class,0);
}
>>

ContextRuleListGetterDecl(r) ::= <<
public List<<<r.ctxName>> <r.name>() {
 return getRuleContexts(<r.ctxName>.class);
}
>>

ContextRuleListIndexedGetterDecl(r) ::= <<
public <r.ctxName> <r.name>(int i) {
 return getRuleContext(<r.ctxName>.class,i);
}
>>

LexerRuleContext() ::= "RuleContext"

/** The rule context name is the rule followed
 by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "<tokenName>"
ImplicitRuleLabel(ruleName) ::= "<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = _input.LT(1);"
CaptureNextTokenType(d) ::= "<d.varName> = _input.LA(1);"

StructDecl(struct,ctorAttrs,attrs,getters,dispatchMethods,interfaces,extensionMembers)
::= <<
public static class <struct.name> extends
<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif><if(interfaces)> implements
<interfaces; separator=", "><endif> {
 <attrs:{a | public <a>;}; separator="\n">
 <getters:{g | <g>;}; separator="\n">
 <if(ctorAttrs)>public <struct.name>(ParserRuleContext parent, int invokingState) { super(parent, invokingState);
 }<endif>
 public <struct.name>(ParserRuleContext parent, int invokingState<ctorAttrs:{a | , <a>>}) {
 super(parent, invokingState);
 <struct.ctorAttrs:{a
 | this.<a.name> = <a.name>;}; separator="\n">
 }
 @Override public int getRuleIndex() { return RULE_<struct.derivedFromName>; }
<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>

```

```

public <struct.name>() { }
public void copyFrom(<struct.name> ctx) {
 super.copyFrom(ctx);
 <struct.attrs:{a | this.<a.name> = ctx.<a.name>;}; separator="\n">
}
<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">
}
>>

```

```

AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
public static class <struct.name> extends <currentRule.name; format="cap">Context {
 <attrs:{a | public <a>;}; separator="\n">
 <getters:{g | <g>;}; separator="\n">
 public <struct.name>(<currentRule.name; format="cap">Context ctx) { copyFrom(ctx); }
 <dispatchMethods; separator="\n">
}
>>

```

```

ListenerDispatchMethod(method) ::= <<
@Override
public void <if(method.isEnter)>enter<else>exit<endif>Rule(ParseTreeListener listener) {
 if (listener instanceof <parser.grammarName>Listener
)
 ((<parser.grammarName>Listener)listener).<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName;
format="cap">(this);
}
>>

```

```

VisitorDispatchMethod(method) ::= <<
@Override
public <T> T accept(ParseTreeVisitor<? extends T> visitor) {
 if (visitor instanceof <parser.grammarName>Visitor) return ((<parser.grammarName>Visitor<? extends
T>)visitor).visit<struct.derivedFromName; format="cap">(this);
 else return visitor.visitChildren(this);
}
>>

```

```

AttributeDecl(d) ::= "<d.type> <d.name><if(d.initValue)> = <d.initValue><endif>"

```

```

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>((<x.ctx.name>)_localctx).<endif><x.name>"

```

```

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "((<actionChunk.ctx.name>)_localctx)"

```

```

// used for left-recursive rules

```

```

recRuleAltPredicate(ruleName,opPrec) ::= "precpred(_ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>;"
recRuleSetStopToken()
 ::= "_ctx.stop = _input.LT(-1);"

```

```

recRuleAltStartAction(ruleName, ctxName, label, isListLabel) ::= <<
 _localctx = new <ctxName>Context(_parentctx, _parentState);
 <if(label)>
 <if(isListLabel)>
 _localctx.<label>.add(_prevctx);
 <else>
 _localctx.<label> = _prevctx;
 <endif>
 <endif>
 <if(label)>_localctx.<label> = _prevctx;<endif>
 pushNewRecursionContext(_localctx, _startState, RULE_<ruleName>);
 >>

```

```

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
 _localctx = new <currentAltLabel; format="cap">Context(new <ruleName; format="cap">Context(_parentctx,
 _parentState));
 <if(label)>
 <if(isListLabel)>
 ((<currentAltLabel; format="cap">Context)_localctx).<label>.add(_prevctx);
 <else>
 ((<currentAltLabel; format="cap">Context)_localctx).<label> = _prevctx;
 <endif>
 <endif>
 pushNewRecursionContext(_localctx, _startState, RULE_<ruleName>);
 >>

```

```

recRuleReplaceContext(ctxName) ::= <<
 _localctx = new <ctxName>Context(_localctx);
 _ctx = _localctx;
 _prevctx
 = _localctx;
 >>

```

```

recRuleSetPrevCtx() ::= <<
 if (_parseListeners!=null) triggerExitRuleEvent();
 _prevctx = _localctx;
 >>

```

```

LexerFile(lexerFile, lexer, namedActions) ::= <<
 <fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
 <if(lexerFile.genPackage)>
 package <lexerFile.genPackage>;

```

```

<endif>
<namedActions.header>
import org.antlr.v4.runtime.Lexer;
import org.antlr.v4.runtime.CharStream;
import org.antlr.v4.runtime.Token;
import org.antlr.v4.runtime.TokenStream;
import org.antlr.v4.runtime.*;
import org.antlr.v4.runtime.atn.*;
import org.antlr.v4.runtime.dfa.DFA;
import org.antlr.v4.runtime.misc.*;

<lexer>
>>

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<
@SuppressWarnings({"all", "warnings", "unchecked", "unused", "cast"})
public class <lexer.name> extends <superClass; null="Lexer"> {
 static { RuntimeMetaData.checkVersion("<lexerFile.ANTLRVersion>", RuntimeMetaData.VERSION); }

 protected static final DFA[] _decisionToDFA;
 protected static final PredictionContextCache
 _sharedContextCache =
 new PredictionContextCache();
 public static final int
 <lexer.tokens:{k | <k>=<lexer.tokens.(k)>}; separator=", ", wrap, anchor>;
 <if(lexer.channels)>
 public static final int
 <lexer.channels:{k | <k>=<lexer.channels.(k)>}; separator=", ", wrap, anchor>;
 <endif>
 <rest(lexer.modes):{m | public static final int <m> = <i>;}; separator="\n">
 public static String[] modeNames = {
 <lexer.modes:{m | "<m>"}; separator=", ", wrap, anchor>
 };

 public static final String[] ruleNames = {
 <lexer.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>
 };

 <vocabulary(lexer.literalNames, lexer.symbolicNames)>

 <namedActions.members>

 public <lexer.name>(CharStream input) {
 super(input);
 _interp = new LexerATNSimulator(this, _ATN, _decisionToDFA, _sharedContextCache);
 }

 @Override

```



```

public String getGrammarFileName() { return "<lexer.grammarFileName>"; }

@Override
public String[] getRuleNames() { return ruleNames; }

@Override
public String
getSerializedATN() { return _serializedATN; }

@Override
public String[] getModeNames() { return modeNames; }

@Override
public ATN getATN() { return _ATN; }

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>
<atn>
}
>>

SerializedATN(model) ::= <<
<if(rest(model.segments))>
<! requires segmented representation !>
private static final int _serializedATNSegments = <length(model.segments)>;
<model.segments:{segment|private static final String _serializedATNSegment<i0> =
"<segment; wrap={ "+<\n><\t>" }>"; separator="\n">
public static final String _serializedATN = Utils.join(
new String[] {
<model.segments:{segment | _serializedATNSegment<i0>}; separator=",\n">
},
""
);
<else>
<! only one segment, can be inlined !>
public static final String _serializedATN =
"<model.serialized; wrap={ "+<\n><\t>" }>";
<endif>
public static final ATN _ATN =
new ATNDeserializer().deserialize(_serializedATN.toCharArray());
static {
_decisionToDFA = new DFA[_ATN.getNumberOfDecisions()];
for
(int i = 0; i < _ATN.getNumberOfDecisions(); i++) {
_decisionToDFA[i] = new DFA(_ATN.getDecisionState(i), i);
}
<! org.antlr.v4.tool.DOTGenerator dot = new org.antlr.v4.tool.DOTGenerator(null);!>
<! System.out.println(dot.getDOT(_ATN.decisionToState.get(0), ruleNames, false));!>
<! System.out.println(dot.getDOT(_ATN.ruleToStartState[2], ruleNames, false));!>

```

```
}
>>
```

```
/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/
```

```
initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>
```

```
codeFileExtension() ::= ".java"
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/Java/Java.stg
```

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```

```
*/
```

```

/** How to generate rules derived from left-recursive rules.
 * These rely on recRuleAltPredicate(),
 * recRuleArg(), recRuleSetResultAction(), recRuleSetReturnAction()
 * templates in main language.stg
 */

```

```
group LeftRecursiveRules;
```

```
recRule(ruleName, argName, primaryAlts, opAlts, setResultAction,
 userRetvals, leftRecursiveRuleRefLabels) ::=
```

```
<<
```

```
<ruleName><if(userRetvals)>
```

```
returns [<userRetvals>]<endif>
```

```
: ({ } <primaryAlts:{alt | <alt.altText> }; separator="\n | ">
```

```
)
```

```
(
```

```
 <opAlts; separator="\n | ">
```

```
)*
```

```
;
```

```
>>
```

```
recRuleAlt(alt, precOption, opPrec, pred) ::= <<
```

```
{<pred>}?{\<precOption>=<opPrec>}> <alt.altText>
```

```
>>
```

Found in path(s):

```

* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/LeftRecursiveRules.stg

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\*/

tree grammar SourceGenTriggers;

options {

language = Java;

tokenVocab = ANTLRParser;

ASTLabelType = GrammarAST;

```

}

@header {
package org.antlr.v4.codegen;
import org.antlr.v4.misc.Utils;
import org.antlr.v4.codegen.model.*;
import org.antlr.v4.codegen.model.decl.*;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
import java.util.Collections;
import
java.util.Map;
import java.util.HashMap;
}

@members {
public OutputModelController controller;
public boolean hasLookaheadBlock;
public SourceGenTriggers(TreeNodeStream input, OutputModelController controller) {
this(input);
this.controller = controller;
}
}

dummy : block[null, null] ;

block[GrammarAST label, GrammarAST ebnfRoot] returns [List<? extends SrcOp> omos]
: ^(blk=BLOCK (^ (OPTIONS .+))?
{List<CodeBlockForAlt> alts = new ArrayList<CodeBlockForAlt>();}
(alternative {alts.add($alternative.altCodeBlock);})+
)
{
if (alts.size()==1 && ebnfRoot==null) return alts;
if (ebnfRoot==null) {
Somos = DefaultOutputModelFactory.list(controller.getChoiceBlock((BlockAST)$blk, alts, $label));
}
else {
Choice choice = controller.getEBNFBlock($ebnfRoot, alts);
hasLookaheadBlock |= choice instanceof PlusBlock || choice instanceof StarBlock;
Somos = DefaultOutputModelFactory.list(choice);
}
}
;

alternative returns [CodeBlockForAlt altCodeBlock, List<SrcOp> ops]
@init {
boolean outerMost = inContext("RULE BLOCK");
}

```

```

@after {
 controller.finishAlternative($altCodeBlock, $ops, outerMost);
}
: a=alt[outerMost] {$altCodeBlock=$a.altCodeBlock; $ops=$a.ops;}
;

alt[boolean outerMost] returns [CodeBlockForAlt altCodeBlock, List<SrcOp> ops]
@init {
 // set alt if outer ALT only (the only ones with alt field set to Alternative object)
 AltAST altAST = (AltAST)retval.start;
 if (outerMost) controller.setCurrentOuterMostAlt(altAST.alt);
}
: {
 List<SrcOp> elems = new ArrayList<SrcOp>();
 // TODO: shouldn't we pass $start to controller.alternative()?
 $altCodeBlock = controller.alternative(controller.getCurrentOuterMostAlt(), outerMost);
 $altCodeBlock.ops = $ops = elems;
 controller.setCurrentBlock($altCodeBlock);
}
^(ALT elementOptions? (element {if ($element.omos!=null) elems.addAll($element.omos);})+)

| ^(ALT elementOptions?
EPSILON)
 {$altCodeBlock = controller.epsilon(controller.getCurrentOuterMostAlt(), outerMost);}
;

element returns [List<? extends SrcOp> omos]
: labeledElement {$omos = $labeledElement.omos;}
| atom[null,false] {$omos = $atom.omos;}
| subrule {$omos = $subrule.omos;}
| ACTION {$omos = controller.action((ActionAST)$ACTION);}
| SEMPRED {$omos = controller.sempred((ActionAST)$SEMPRED);}
| ^(ACTION elementOptions) {$omos = controller.action((ActionAST)$ACTION);}
| ^(SEMPRED elementOptions) {$omos = controller.sempred((ActionAST)$SEMPRED);}
;

labeledElement returns [List<? extends SrcOp> omos]
: ^(ASSIGN ID atom[$ID,false]) {$omos = $atom.omos;}
| ^(PLUS_ASSIGN ID atom[$ID,false]) {$omos = $atom.omos;}
| ^(ASSIGN ID block[$ID,null]) {$omos = $block.omos;}
| ^(PLUS_ASSIGN ID block[$ID,null]) {$omos = $block.omos;}
;

subrule returns [List<? extends SrcOp> omos]
: ^(OPTIONAL b=block[null,$OPTIONAL])
{
 $omos = $block.omos;
}

```

```

| (^{op=CLOSURE
b=block[null,null])
| ^{op=POSITIVE_CLOSURE b=block[null,null])
)
{
List<CodeBlockForAlt> alts = new ArrayList<CodeBlockForAlt>();
SrcOp blk = $b.omos.get(0);
CodeBlockForAlt alt = new CodeBlockForAlt(controller.delegate);
alt.addOp(blk);
alts.add(alt);
SrcOp loop = controller.getEBNFBlock($op, alts); // "star it"
 hasLookaheadBlock |= loop instanceof PlusBlock || loop instanceof StarBlock;
 $somos = DefaultOutputModelFactory.list(loop);
}
| block[null, null] {$somos = $block.omos;}
;

blockSet[GrammarAST label, boolean invert] returns [List<SrcOp> omos]
: ^(SET atom[label,invert]+) {$somos = controller.set($SET, $label, invert);}
;

/*
setElement
: STRING_LITERAL
| TOKEN_REF
| ^(RANGE STRING_LITERAL STRING_LITERAL)
;
*/

// TODO: combine ROOT/BANG into one then just make new op ref'ing return value of atom/terminal...
// TODO: same for NOT
atom[GrammarAST label, boolean invert] returns [List<SrcOp> omos]
: ^(NOT
a=atom[$label, true]) {$somos = $a.omos;}
| range[label] {$somos = $range.omos;}
| ^(DOT ID terminal[$label])
| ^(DOT ID ruleref[$label])
| ^(WILDCARD .) {$somos = controller.wildcard($WILDCARD, $label);}
| WILDCARD {$somos = controller.wildcard($WILDCARD, $label);}
| terminal[label] {$somos = $terminal.omos;}
| ruleref[label] {$somos = $ruleref.omos;}
| blockSet[$label, invert] {$somos = $blockSet.omos;}
;

ruleref[GrammarAST label] returns [List<SrcOp> omos]
: ^(RULE_REF ARG_ACTION? elementOptions?) {$somos = controller.ruleRef($RULE_REF, $label,
$ARG_ACTION);}
;

```

```
range[GrammarAST label] returns [List<SrcOp> omos]
: ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
;
```

```
terminal[GrammarAST label] returns [List<SrcOp> omos]
: ^(STRING_LITERAL .) {$omos = controller.stringRef($STRING_LITERAL, $label);}
| STRING_LITERAL {$omos = controller.stringRef($STRING_LITERAL, $label);}
| ^(TOKEN_REF ARG_ACTION .) {$omos =
controller.tokenRef($TOKEN_REF, $label, $ARG_ACTION);}
| ^(TOKEN_REF .) {$omos = controller.tokenRef($TOKEN_REF, $label, null);}
| TOKEN_REF {$omos = controller.tokenRef($TOKEN_REF, $label, null);}
;
```

```
elementOptions
: ^(ELEMENT_OPTIONS elementOption+)
;
```

```
elementOption
: ID
| ^(ASSIGN ID ID)
| ^(ASSIGN ID STRING_LITERAL)
| ^(ASSIGN ID ACTION)
| ^(ASSIGN ID INT)
;
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/codegen/SourceGenTriggers.g
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```

```
lexer grammar ActionSplitter;
```

```
options { filter=true; }
```

```
@header {
package org.antlr.v4.parse;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
}

```

```
@members {
ActionSplitterListener delegate;

```

```
public ActionSplitter(CharStream input, ActionSplitterListener delegate) {
 this(input, new RecognizerSharedState());
 this.delegate = delegate;
}

```

```
/** force filtering
 (and return tokens). triggers all above actions. */
public List<Token> getActionTokens() {
 List<Token> chunks = new ArrayList<Token>();
 Token t = nextToken();
 while (t.getType()!=Token.EOF) {
 chunks.add(t);
 t = nextToken();
 }
 return chunks;
}

```

```
private boolean isIDStartChar(int c) {
 return c == '_' || Character.isLetter(c);
}
}

```

```

// ignore comments right away

COMMENT
: /*' (options {greedy=false;} : .)* */' {delegate.text($text);}
;

LINE_COMMENT
: //' ~("\n"\"r")* \"r'? \"n' {delegate.text($text);}
;

SET_NONLOCAL_ATTR
: '$ x=ID ':' y=ID WS? '=' expr=ATTR_VALUE_EXPR ';'
{
delegate.setNonLocalAttr($text, $x, $y, $expr);
}
;

NONLOCAL_ATTR
: '$ x=ID ':' y=ID {delegate.nonLocalAttr($text, $x, $y);}
;

QUALIFIED_ATTR
: '$ x=ID ' y=ID {input.LA(1)!='('}? {delegate.qualifiedAttr($text, $x, $y);}
;

SET_ATTR
: '$ x=ID WS? '=' expr=ATTR_VALUE_EXPR ';'
{
delegate.setAttr($text, $x, $expr);
}
;

ATTR
: '$
x=ID {delegate.attr($text, $x);}
;

// Anything else is just random text
TEXT
@init {StringBuilder buf = new StringBuilder();}
@after {delegate.text(buf.toString());}
: (c~("\| '$) {buf.append((char)$c);}
| \"\$' {buf.append('$');}
| \"\| c~('$) {buf.append(\"\\").append((char)$c);}
| {!isIDStartChar(input.LA(2))}? => '$' {buf.append('$');}
)+
;

```

fragment

```
ID : ('a'..'z'|'A'..'Z'|'_') ('a'..'z'|'A'..'Z'|'0'..'9'|'_')*
```

;

```
/** Don't allow an = as first char to prevent $x == 3; kind of stuff. */
```

fragment

```
ATTR_VALUE_EXPR
```

```
: ~ '=' (~';')*
```

;

fragment

```
WS : (' '\t' '\n' '\r')+;
```

Found in path(s):

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\*/

/\*\* ANTLR tool checks output templates are compatible with tool code generation.

\* For now, a simple string match used on x.y of x.y.z scheme.

\* Must match Tool.VERSION during load to templates.

\*

\* REQUIRED.

\*/

```
pythonTypeInitMap ::= [
```

```
 "bool":"False",
```

```
 "int":"0",
```

```
 "float":"0.0",
```

```
 "str": "",
```

```
 default:"None" // anything other
```

```
 than a primitive type is an object
```

```
]
```

```
// args must be <object-model-object>, <fields-resulting-in-STs>
```

```
ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
```

```
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
```

```
var antlr4 = require('antlr4/index');
```

```
<if(file.genListener)>
```

```
var <file.grammarName>Listener = require('./<file.grammarName>Listener').<file.grammarName>Listener;
```

```
<endif>
```

```
<if(file.genVisitor)>
```

```
var <file.grammarName>Visitor = require('./<file.grammarName>Visitor').<file.grammarName>Visitor;
```

```
<endif>
```

```
<namedActions.header>
```

```
<parser>
```

```
>>
```

```
ListenerFile(file, header, namedActions) ::= <<
```

```
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
```

```
var antlr4 = require('antlr4/index');
```

```
// This class defines a complete listener for a parse tree produced by <file.parserName>.
```

```
function <file.grammarName>Listener() {
```

```
 antlr4.tree.ParseTreeListener.call(this);
```

```
 return this;
```

```
}
```

```
<file.grammarName>Listener.prototype = Object.create(antlr4.tree.ParseTreeListener.prototype);
```

```
<file.grammarName>Listener.prototype.constructor
```

```

= <file.grammarName>Listener;

<file.listenerNames:{ lname |
// Enter a parse tree produced by <file.parserName>#<lname>.
<file.grammarName>Listener.prototype.enter<lname; format="cap"> = function(ctx) {
\};

// Exit a parse tree produced by <file.parserName>#<lname>.
<file.grammarName>Listener.prototype.exit<lname; format="cap"> = function(ctx) {
\};

}; separator="\n">

exports.<file.grammarName>Listener = <file.grammarName>Listener;
>>

VisitorFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
var antlr4 = require('antlr4/index');

// This class defines a complete generic visitor for a parse tree produced by <file.parserName>.

function <file.grammarName>Visitor() {
 antlr4.tree.ParseTreeVisitor.call(this);
 return this;
}

<file.grammarName>Visitor.prototype = Object.create(antlr4.tree.ParseTreeVisitor.prototype);
<file.grammarName>Visitor.prototype.constructor = <file.grammarName>Visitor;

<file.visitorNames:{ lname
|
// Visit a parse tree produced by <file.parserName>#<lname>.
<file.grammarName>Visitor.prototype.visit<lname; format="cap"> = function(ctx) {
 return this.visitChildren(ctx);
\};

}; separator="\n">

exports.<file.grammarName>Visitor = <file.grammarName>Visitor;
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
// Generated from <grammarFileName; format="java-escape"> by ANTLR <ANTLRVersion>
// jshint ignore: start
>>

```

```

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<if(superClass)>
var <superClass> = require('./<superClass>').<superClass>;
<endif>

var grammarFileName = "<parser.grammarFileName; format='java-escape'>";

<atn>

var atn = new antlr4.atn.ATNDeserializer().deserialize(serializedATN);

var decisionsToDFA = atn.decisionToState.map(function(ds, index) { return new antlr4.dfa.DFA(ds, index); });

var sharedContextCache = new antlr4.PredictionContextCache();

var literalNames = [<parser.literalNames:{t | <t>}; null="null", separator=", ", wrap,
anchor>];

var symbolicNames = [<parser.symbolicNames:{t | <t>}; null="null", separator=", ", wrap, anchor>];

var ruleNames = [<parser.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>];

function <parser.name> (input) {
<superClass; null="antlr4.Parser">.call(this, input);
this._interp = new antlr4.atn.ParserATNSimulator(this, atn, decisionsToDFA, sharedContextCache);
this.ruleNames = ruleNames;
this.literalNames = literalNames;
this.symbolicNames = symbolicNames;
<namedActions.members>
return this;
}

<parser.name>.prototype = Object.create(<superClass; null="antlr4.Parser">.prototype);
<parser.name>.prototype.constructor = <parser.name>;

Object.defineProperty(<parser.name>.prototype, "atn", {
get : function() {
return atn;
}
});

<parser.name>.EOF = antlr4.Token.EOF;
<if(parser.tokens)>
<parser.tokens:{k | <parser.name>.<k> = <parser.tokens.(k)>;}; separator="\n", wrap, anchor>
<endif>

<parser.rules:{r | <parser.name>.RULE_<r.name> = <r.index>;};

```

```

separator="\n", wrap, anchor>

<funcs; separator="\n">

<if(sempredFuncs)>
<parser.name>.prototype.sempred = function(localctx, ruleIndex, predIndex) {
switch(ruleIndex) {
<parser.sempredFuncs.values:{f | case <f.ruleIndex>:
return this.<f.name>_sempred(localctx, predIndex);}; separator="\n">
default:
 throw "No predicate with index:" + ruleIndex;
}
};

<sempredFuncs.values; separator="\n">
<endif>

exports.<parser.name> = <parser.name>;

>>

dumpActions(recog, argFuncs, actionFuncs, sempredFuncs) ::= <<
<if(actionFuncs)>
<lexer.name>.prototype.action = function(localctx, ruleIndex, actionIndex) {
switch (ruleIndex) {
<recog.actionFuncs.values:{f}
case <f.ruleIndex>:
this.<f.name>_action(localctx, actionIndex);
break;}; separator="\n">
default:
 throw "No registered action for:" + ruleIndex;
}
};

<actionFuncs.values; separator="\n">
<endif>
<if(sempredFuncs)>
<lexer.name>.prototype.sempred = function(localctx, ruleIndex, predIndex) {
switch (ruleIndex) {
<recog.sempredFuncs.values:{f}
case <f.ruleIndex>:
return this.<f.name>_sempred(localctx, predIndex);}; separator="\n">
default:
 throw "No registered predicate for:" + ruleIndex;
}
};

<sempredFuncs.values; separator="\n">

```

```

<endif>
>>

/* This generates a private method since the actionIndex is generated, making an
 * overriding implementation impossible to maintain.
 */
RuleActionFunction(r, actions) ::= <<

<lexer.name>.prototype.<r.name>_action = function(localctx , actionIndex) {
 switch (actionIndex) {
 <actions:{index|
case <index>:
 <actions.(index)>
 break;}; separator="\n">
 default:
 throw "No registered action for:" + actionIndex;
 }
};
>>

/* This generates a private method since the predIndex is generated, making an
 * overriding implementation impossible to maintain.
 */
RuleSempredFunction(r, actions) ::= <<
<if (r.factory.g.lexer)><lexer.name><else><parser.name><endif>.prototype.<r.name>_sempred = function(localctx,
predIndex) {
 switch(predIndex) {
 <actions:{index|
case <index>:
 return <actions.(index)>;}; separator="\n">
 default:
 throw "No predicate with index:" + predIndex;
 }
};
>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<ruleCtx>

<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<! Define fields of this parser to export the context classes !>
<parser.name>.<currentRule.ctxType> = <currentRule.ctxType>;

```



```

<parser.name>.prototype.<currentRule.name> = function(<currentRule.args:{a | <a.name>}; separator=", ">) {

 var localctx = new <currentRule.ctxType>(this, this._ctx, this.state<currentRule.args:{a | , <a.name>}>);
 this.enterRule(localctx, <currentRule.startState>, <parser.name>.RULE_<currentRule.name>);
 <namedActions.init>
 <locals; separator="\n">
 try {
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 <if(exceptions)>
 <exceptions; separator="\n">
 <else>
 } catch (re)
 {
 if(re instanceof antlr4.error.RecognitionException) {
 localctx.exception = re;
 this._errHandler.reportError(this, re);
 this._errHandler.recover(this, re);
 } else {
 throw re;
 }
 }<endif> finally {
 <finallyAction>
 this.exitRule();
 }
 return localctx;
};

>>

```

```

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
 namedActions,finallyAction,postamble) ::=
<<

```

```

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

<parser.name>.prototype.<currentRule.name> = function(_p<if(currentRule.args)>, <args:{a | , <a>}><endif>) {
 if(_p===undefined) {
 _p = 0;
 }
 var _parentctx = this._ctx;
 var _parentState = this.state;
 var localctx = new <currentRule.ctxType>(this, this._ctx, _parentState<args:{a | , <a.name>}>);
 var _prevctx = localctx;
 var _startState = <currentRule.startState>;
 this.enterRecursionRule(localctx, <currentRule.startState>, <parser.name>.RULE_<currentRule.name>,

```

```

 _p);
 <namedActions.init>
 <locals; separator="\n">
 try {
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 } catch(error) {
 if(error instanceof antlr4.error.RecognitionException) {
 localctx.exception = error;
 this._errHandler.reportError(this, error);
 this._errHandler.recover(this, error);
 } else {
 throw error;
 }
 } finally {
 <finallyAction>
 this.unrollRecursionContexts(_parentctx)
 }
 return localctx;
};

```

>>

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>localctx = new <currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(this, localctx);<endif>
this.enterOuterAlt(localctx, <currentOuterMostAltCodeBlock.alt.altNum>);
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<
<locals;
separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<if(choice.label)><labelref(choice.label)> = this._input.LT(1);<endif>
<preamble; separator="\n">
switch(this._input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
 <alt>
 break;}; separator="\n">
default:

```

```
<error>
}
>>
```

```
LL1OptionalBlock(choice, alts, error) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
switch (this._input.LA(1)) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break;}; separator="\n">
default:
<error>
}
>>
```

```
LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<preamble; separator="\n">
if(<expr>) {
<alts; separator="\n">
}
<!else if (!(<followExpr>) <error!>
>>
```

```
LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble,
iteration) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<preamble; separator="\n">
while(<loopExpr>) {
<alts; separator="\n">
this.state = <choice.loopBackStateNumber>;
this._errHandler.sync(this);
<iteration>
}
>>
```

```
LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
this.state = <choice.blockStartStateNumber>; <! alt block decision !>
this._errHandler.sync(this);
<preamble; separator="\n">
do {
<alts; separator="\n">
this.state = <choice.stateNumber>; <! loopback/exit decision !>
this._errHandler.sync(this);
<iteration>
```

```

} while(<loopExpr>);
>>

// LL(*) stuff

AltBlock(choice, preamble, alts, error) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
var la_ = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx);
switch(la_) {
<alts:{alt |
case <i>:
 <alt>
 break;
}; separator="\n">
}
>>

OptionalBlock(choice,
alts, error) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
var la_ = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx);
<alts:{alt |
if(la_===<i><if(!choice.ast.greedy)>+1<endif>) {
 <alt>
}; separator="\n} else ">
}
>>

StarBlock(choice, alts, sync, iteration) ::= <<
this.state = <choice.stateNumber>;
this._errHandler.sync(this);
var _alt = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx)
while(_alt!=<choice.exitAlt> && _alt!=antlr4.atn.ATN.INVALID_ALT_NUMBER) {
 if(_alt===1<if(!choice.ast.greedy)>+1<endif>) {
 <iteration>
 <alts> <! should only be one !>
 }
 this.state = <choice.loopBackStateNumber>;
 this._errHandler.sync(this);
 _alt = this._interp.adaptivePredict(this._input,<choice.decision>,this._ctx);
}
>>

```

```

PlusBlock(choice, alts, error) ::= <<
this.state = <choice.blockStartStateNumber>; <! alt block decision !>
this._errHandler.sync(this);
var
_alt = 1<if(!choice.ast.greedy)>+1<endif>;
do {
switch (_alt) {
<alts:{alt|
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break;}; separator="\n">
default:
<error>
}
this.state = <choice.loopBackStateNumber>; <! loopback/exit decision !>
this._errHandler.sync(this);
_alt = this._interp.adaptivePredict(this._input,<choice.decision>, this._ctx);
} while (_alt!=<choice.exitAlt> && _alt!=antlr4.atn.ATN.INVALID_ALT_NUMBER);
>>

```

```

Sync(s) ::= "sync(<s.expecting.name>)"

```

```

ThrowNoViableAlt(t) ::= "throw new antlr4.error.NoViableAltException(this);"

```

```

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" || ">
>>

```

```

// Javascript language spec - shift operators are 32 bits long max
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x1f) == 0
>>

```

```

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%
(<testShiftInRange({<offsetShiftVar(s.varName,
bits.shift)>})> && ((1 \<< <offsetShiftVar(s.varName, bits.shift)>) & (<bits.ttypes:{ttype | (1 \<<
<offsetShiftType(ttype, bits.shift)>}); separator=" | ">)) != 0)
%>

```

```

isZero ::= [
"0":true,
default:false
]

```

```

offsetShiftVar(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>

```

```

%>

offsetShiftType(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><parser.name>.<shiftAmount> - <offset><else><parser.name>.<shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ ttype | <s.varName>===<parser.name>.<ttype>} ; separator=" || ">
%>

cases(ttypes) ::= <<
<ttypes:{ t | case <parser.name>.<t>}; separator="\n">
>>

InvokeRule(r, argExprsChunks) ::= <<
this.state = <r.stateNumber>;
<if(r.labels)><r.labels:{ l | <labelref(l)> =
}><endif>this.<r.name><(<if(r.ast.options.p)><r.ast.options.p><(<if(argExprsChunks)><endif><endif><argExprsChu
nks>)>;
>>

MatchToken(m)
::= <<
this.state = <m.stateNumber>;
<if(m.labels)><m.labels:{ l | <labelref(l)> = }><endif>this.match(<parser.name>.<m.name>);
>>

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

CommonSetStuff(m, expr, capture, invert) ::= <<
this.state = <m.stateNumber>;
<if(m.labels)><m.labels:{ l | <labelref(l)> = }>this._input.LT(1);<endif>
<capture>
<if(invert)>if(<m.varName>\<=0 || <expr><else>if(!(<expr>))<endif> {
 <if(m.labels)><m.labels:{ l | <labelref(l)> = }><endif>this._errHandler.recoverInline(this);
}
else {
 this._errHandler.reportMatch(this);
 this.consume();
}
>>

Wildcard(w) ::= <<
this.state = <w.stateNumber>;
<if(w.labels)><w.labels:{ l | <labelref(l)> = }><endif>matchWildcard();

```

```

>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

SemPred(p, chunks, failChunks) ::= <<
this.state
= <p.stateNumber>;
if (!(<chunks>)) {
 throw new antlr4.error.FailedPredicateException(this, <p.predicate><if(failChunks)>,
<failChunks><elseif(p.msg)>, <p.msg><endif>);
}
>>

ExceptionClause(e, catchArg, catchAction) ::= <<
catch (<catchArg>) {
 <catchAction>
}
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "this.skip()"
LexerMoreCommand() ::= "this.more()"
LexerPopModeCommand() ::= "this.popMode()"
LexerTypeCommand(arg, grammar) ::= "this._type = <arg>"
LexerChannelCommand(arg, grammar) ::= "this._channel = <arg>"
LexerModeCommand(arg, grammar) ::= "this._mode = <arg>"
LexerPushModeCommand(arg, grammar) ::= "this.pushMode(<arg>)"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "localctx.<a.name>"
LocalRef(a) ::= "localctx.<a.name>"
RetValRef(a) ::= "localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t)
 ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

```

```

TokenPropertyRef_text(t) ::= "<ctx(t)>.<t.label>===null ? null : <ctx(t)>.<t.label>.text)"
TokenPropertyRef_type(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.type)"
TokenPropertyRef_line(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.line)"
TokenPropertyRef_pos(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.column)"
TokenPropertyRef_channel(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.channel)"
TokenPropertyRef_index(t) ::= "<ctx(t)>.<t.label> === null ? 0 : <ctx(t)>.<t.label>.tokenIndex)"
TokenPropertyRef_int(t) ::= "<ctx(t)>.<t.label> === null ? 0 : parseInt(<ctx(t)>.<t.label>.text))"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label>===null ? null : <ctx(r)>.<r.label>.start)"
RulePropertyRef_stop(r)
 ::= "<ctx(r)>.<r.label>===null ? null : <ctx(r)>.<r.label>.stop)"
RulePropertyRef_text(r) ::= "<ctx(r)>.<r.label>===null ? null : this._input.getText(new
antlr4.Interval(<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop)))"
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "this"

ThisRulePropertyRef_start(r) ::= "localctx.start"
ThisRulePropertyRef_stop(r) ::= "localctx.stop"
ThisRulePropertyRef_text(r) ::= "this._input.getText(new antlr4.Interval(localctx.start, this._input.LT(-1)))"
ThisRulePropertyRef_ctx(r) ::= "localctx"
ThisRulePropertyRef_parser(r) ::= "this"

NonLocalAttrRef(s) ::= "getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::= "getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.push(<labelref(a.label)>);"

TokenDecl(t) ::= "this.<t.name> = null; // <TokenLabelType(>"
TokenTypeDecl(t) ::= "var <t.name>
 = 0; // <TokenLabelType(> type"
TokenListDecl(t) ::= "this.<t.name> = []; // of <TokenLabelType(>s"
RuleContextDecl(r) ::= "this.<r.name> = null; // <r.ctxName>"
RuleContextListDecl(rdecl) ::= "this.<rdecl.name> = []; // of <rdecl.ctxName>s"

ContextTokenGetterDecl(t) ::= <<
<t.name> = function() {
 return this.getToken(<parser.name>.<t.name>, 0);
};
>>

// should never be called
ContextTokenListGetterDecl(t) ::= <<
def <t.name>_list(self):
 return self.getTokens(<parser.name>.<t.name>)
>>

ContextTokenListIndexedGetterDecl(t) ::= <<

```



```

<t.name> = function(i) {
 if(i===undefined) {
 i = null;
 }
 if(i===null) {
 return this.getTokens(<parser.name>.<t.name>);
 } else {
 return this.getToken(<parser.name>.<t.name>, i);
 }
};

```

```
>>
```

```

ContextRuleGetterDecl(r) ::= <<
<r.name> = function() {
 return this.getTypedRuleContext(<r.ctxName>,0);
};

```

```
>>
```

```
// should never be called
```

```

ContextRuleListGetterDecl(r) ::= <<
def <r.name>_list(self):
 return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)

```

```
>>
```

```

ContextRuleListIndexedGetterDecl(r)
 ::= <<
<r.name> = function(i) {
 if(i===undefined) {
 i = null;
 }
 if(i===null) {
 return this.getTypedRuleContexts(<r.ctxName>);
 } else {
 return this.getTypedRuleContext(<r.ctxName>,i);
 }
};

```

```
>>
```

```
LexerRuleContext() ::= "RuleContext"
```

```

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */

```

```
RuleContextNameSuffix() ::= "Context"
```

```
ImplicitTokenLabel(tokenName) ::= "_<tokenName>"
```

```

ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = self._input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = this._input.LA(1);"

StructDecl(struct,ctorAttrs,attrs, getters,dispatchMethods,interfaces,extensionMembers) ::= <<
function <struct.name>(parser, parent, invokingState<struct.ctorAttrs:{a | , <a.name>}>) {
 if(parent===undefined)
 {
 parent = null;
 }
 if(invokingState===undefined || invokingState===null) {
 invokingState = -1;
 }
 <if(contextSuperClass)><contextSuperClass><else>antlr4.ParserRuleContext<endif>.call(this, parent,
invokingState);
 this.parser = parser;
 this.ruleIndex = <parser.name>.RULE_<struct.derivedFromName>;
 <attrs:{a | <a>} ; separator="\n">
 <struct.ctorAttrs:{a | this.<a.name> = <a.name> || null;} ; separator="\n">
 return this;
}

<struct.name>.prototype =
Object.create(<if(contextSuperClass)><contextSuperClass><else>antlr4.ParserRuleContext<endif>.prototype);
<struct.name>.prototype.constructor = <struct.name>;

<getters:{g | <struct.name>.prototype.<g>} ; separator="\n\n">

<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>
<struct.name>.prototype.copyFrom = function(ctx) {
 <if(contextSuperClass)><contextSuperClass><else>antlr4.ParserRuleContext<endif>.prototype.copyFrom.call(this,
ctx);
 <struct.attrs:{a | this.<a.name> = ctx.<a.name>} ;
 separator="\n">
};
<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">

>>

AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
function <struct.name>(parser, ctx) {
 <currentRule.name; format="cap">Context.call(this, parser);
 <attrs:{a | <a>} ; separator="\n">

```

```

 <currentRule.name; format="cap">Context.prototype.copyFrom.call(this, ctx);
 return this;
}

<struct.name>.prototype = Object.create(<currentRule.name; format="cap">Context.prototype);
<struct.name>.prototype.constructor = <struct.name>;

<! Define fields of this parser to export this struct/context class !>
<parser.name>.<struct.name> = <struct.name>;

<getters:{g | <struct.name>.prototype.<g>}; separator="\n\n">
<dispatchMethods; separator="\n">

>>

ListenerDispatchMethod(method) ::= <<
<struct.name>.prototype.<if(method.isEnter)>enter<else>exit<endif>Rule = function(listener) {
 if(listener instanceof <parser.grammarName>Listener) {
 listener.<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName>;
 format="cap">(this);
 }
};

>>

VisitorDispatchMethod(method) ::= <<
<struct.name>.prototype.accept = function(visitor) {
 if (visitor instanceof <parser.grammarName>Visitor) {
 return visitor.visit<struct.derivedFromName>; format="cap">(this);
 } else {
 return visitor.visitChildren(this);
 }
};

>>

AttributeDecl(d) ::= "this.<d.name> = <if(d.initValue)><d.initValue><else>null<endif>"

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>localctx.<endif><x.name>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "localctx"

// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "this.precpred(this._ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>"
recRuleSetStopToken() ::= "this._ctx.stop = this._input.LT(-1);"

```

```

recRuleAltStartAction(ruleName, ctxName,
 label) ::= <<
localctx = new <ctxName>Context(this, _parentctx, _parentState);
<if(label)>localctx.<label> = _prevctx;<endif>
this.pushNewRecursionContext(localctx, _startState, <parser.name>.RULE_<ruleName>);
>>

```

```

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
localctx = new <currentAltLabel; format="cap">Context(this, new <ruleName; format="cap">Context(this,
 _parentctx, _parentState));
<if(label)>
<if(isListLabel)>
localctx.<label>.push(_prevctx);
<else>
localctx.<label> = _prevctx;
<endif>
<endif>
this.pushNewRecursionContext(localctx, _startState, <parser.name>.RULE_<ruleName>);
>>

```

```

recRuleReplaceContext(ctxName) ::= <<
localctx = new <ctxName>Context(this, localctx);
this._ctx = localctx;
_prevctx = localctx;
>>

```

```

recRuleSetPrevCtx() ::= <<
if(this._parseListeners!=null) {
 this.triggerExitRuleEvent();
}
_prevctx = localctx;
>>

```

```

LexerFile(lexerFile, lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
var
 antlr4 = require('antlr4/index');

<namedActions.header>

<lexer>

>>

```

```

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<

```

```

<atn>

var atn = new antlr4.atn.ATNDeserializer().deserialize(serializedATN);

var decisionsToDFA = atn.decisionToState.map(function(ds, index) { return new antlr4.dfa.DFA(ds, index); });

function <lexer.name>(input) {
 <if(superClass)><superClass><else>antlr4.Lexer<endif>.call(this, input);
 this._interp = new antlr4.atn.LexerATNSimulator(this, atn, decisionsToDFA, new
antlr4.PredictionContextCache());
 return this;
}

<lexer.name>.prototype = Object.create(<if(superClass)><superClass><else>antlr4.Lexer<endif>.prototype);
<lexer.name>.prototype.constructor = <lexer.name>;

<lexer.name>.EOF = antlr4.Token.EOF;
<lexer.tokens>:{k | <lexer.name>.<k> = <lexer.tokens.<k>>; separator="\n", wrap, anchor>

<rest(lexer.modes):{m| <lexer.name>.<m> = <i>; separator="\n">

<lexer.name>.prototype.modeNames = [<lexer.modes:{m| "<m>">; separator=", ",
wrap, anchor>];

<lexer.name>.prototype.literalNames = [<lexer.literalNames:{t | <t>>; null="null", separator=", ", wrap, anchor>];

<lexer.name>.prototype.symbolicNames = [<lexer.symbolicNames:{t | <t>>; null="null", separator=", ", wrap,
anchor>];

<lexer.name>.prototype.ruleNames = [<lexer.ruleNames:{r | "<r>">; separator=", ", wrap, anchor>];

<lexer.name>.prototype.grammarFileName = "<lexer.grammarFileName>";

<namedActions.members>

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>

exports.<lexer.name> = <lexer.name>;

>>

SerializedATN(model) ::= <<
<! only one segment, can be inlined !>

var serializedATN = ["<model.serialized; wrap={", <n> " }>"].join("");

>>

```

```
/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>
```

```
codeFileExtension() ::= ".js"
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/JavaScript/JavaScript.stg
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```

```
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```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/Cpp/Files.stg
```

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\*/

/\*

This file contains the actual layout of the messages emitted by ANTLR.

This file contains the default format ANTLR uses.

\*/

location(file, line, column) ::= "<file>:<line>:<column>:"

message(id, text) ::= "<id> <text>"

report(location, message, type) ::= "<type>(<message.id>): <location> <message.text>"

wantsSingleLineMessage() ::= "false"

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/messages/formats/antlr.stg

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\*/

/\*

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The text itself is coming out of the languages/\*stg files, according to the chosen locale.

This file contains the format that mimicks GCC output.

\*/

location(file, line, column) ::= "<file>:<line>:"

message(id, text) ::= "<text> (<id>)"

report(location, message, type) ::= "<location> <type>: <message>"

wantsSingleLineMessage() ::= "true"

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/messages/formats/gnu.stg

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\*/

```
/** templates used to generate make-compatible dependencies */
```

```
/** Generate "f : x, y, z" dependencies for input
```

```
* dependencies and generated files. in and out
```

```
* are File objects. For example, you can say
```

```
* <f.canonicalPath>
```

```
*/
```

```
dependencies(grammarFileName,in,out) ::= <<
```

```
<if(in)><grammarFileName>: <in; separator=", "><endif>
```

```
<out:{f | <f> : <grammarFileName>};
```

```
separator="\n">
```

```
>>
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/tool/templates/depend.stg
```

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```

*/

/** ANTLR tool checks output templates are compatible with tool code generation.
 * For now, a simple string match used on x.y of x.y.z scheme.
 * Must match Tool.VERSION during load to templates.
 *
 * REQUIRED.
 */

pythonTypeInitMap ::= [
 "bool":"False",
 "int":"0",
 "float":"0.0",
 "str": "",
 default:"None" // anything other
 than a primitive type is an object
]

// args must be <object-model-object>, <fields-resulting-in-STs>

ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
encoding: utf-8
from __future__ import print_function
from antlr4 import *
from io import StringIO

<namedActions.header>
<parser>

>>

ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
from antlr4 import *
<header>

This class defines a complete listener for a parse tree produced by <file.parserName>.
class <file.grammarName>Listener(ParseTreeListener):

 <file.listenerNames>: {lname |
Enter a parse tree produced by <file.parserName>#<lname>.
def enter<lname>; format="cap">(self, ctx):
 pass

Exit a parse tree produced by <file.parserName>#<lname>.
def exit<lname>; format="cap">(self, ctx):
 pass

```

```
}; separator="\n">
```

```
>>
```

```
VisitorFile(file, header, namedActions) ::= <<
```

```
<fileHeader(file.grammarFileName,
```

```
file.ANTLRVersion)>
```

```
from antlr4 import *
```

```
<header>
```

```
This class defines a complete generic visitor for a parse tree produced by <file.parserName>.
```

```
class <file.grammarName>Visitor(ParseTreeVisitor):
```

```
 <file.visitorNames: {Iname |
```

```
Visit a parse tree produced by <file.parserName>#<Iname>.
```

```
def visit<Iname; format="cap">(self, ctx):
```

```
 return self.visitChildren(ctx)
```

```
}; separator="\n">
```

```
>>
```

```
fileHeader(grammarFileName, ANTLRVersion) ::= <<
```

```
Generated from <grammarFileName> by ANTLR <ANTLRVersion>
```

```
>>
```

```
Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
```

```
<Parser_(ctor="parser_ctor", ...)>
```

```
>>
```

```
Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
```

```
<if(superClass)>
```

```
from .<superClass> import <superClass>
```

```
<endif>
```

```
<atn>
```

```
class <parser.name> (<if(superClass)><superClass><else>Parser<endif>):
```

```
 grammarFileName = "<parser.grammarFileName>"
```

```
 atn = ATNDeserializer().deserialize(serializedATN())
```

```
 decisionsToDFA = [DFA(ds, i) for i, ds in enumerate(atn.decisionToState)
```

]

```
sharedContextCache = PredictionContextCache()
```

```
literalNames = [<parser.literalNames:{t | u<t>}; null="u\"<INVALID>\"", separator=", ", wrap, anchor]
```

```
symbolicNames = [<parser.symbolicNames:{t | u<t>}; null="u\"<INVALID>\"", separator=", ", wrap, anchor]
```

```
<parser.rules:{r | RULE_<r.name> = <r.index>}; separator="\n", wrap, anchor>
```

```
ruleNames = [<parser.ruleNames:{r | u"<r>"}; separator=", ", wrap, anchor]
```

```
EOF = <TokenLabelType().EOF
```

```
<if(parser.tokens)>
```

```
<parser.tokens:{k | <k>=<parser.tokens.(k)>}; separator="\n", wrap, anchor>
```

```
<endif>
```

```
<parser:(ctor())>
```

```
<namedActions.members>
```

```
<funcs; separator="\n">
```

```
<if(sembredFuncs)>
```

```
def sembred(self, localctx, ruleIndex, predIndex):
```

```
 if self._predicates == None:
```

```
 self._predicates = dict()
```

```
<parser.sembredFuncs.values:{f |
```

```
 self._predicates[<f.ruleIndex>] = self.<f.name>_sembred}; separator="\n ">
```

```
 pred = self._predicates.get(ruleIndex,
```

```
 None)
```

```
 if pred is None:
```

```
 raise Exception("No predicate with index:" + str(ruleIndex))
```

```
 else:
```

```
 return pred(localctx, predIndex)
```

```
<sembredFuncs.values; separator="\n">
```

```
<endif>
```

```
>>
```

```
dumpActions(recog, argFuncs, actionFuncs, sembredFuncs) ::= <<
```

```
<if(actionFuncs)>
```

```
def action(self, localctx, ruleIndex, actionIndex):
```

```
 if self._actions is None:
```

```

 actions = dict()
<recog.actionFuncs.values: {f|
 actions[<f.ruleIndex>] = self.<f.name>_action }; separator="\n">
 self._actions = actions
 action = self._actions.get(ruleIndex, None)
 if action is not None:
 action(localctx, actionIndex)
 else:
 raise Exception("No registered action for:" + str(ruleIndex))

<actionFuncs.values; separator="\n">

<endif>
<if(sempredFuncs)>
def sempred(self, localctx, ruleIndex, predIndex):
 if self._predicates is None:
 preds = dict()
<recog.sempredFuncs.values: {f|
 preds[<f.ruleIndex>] = self.<f.name>_sempred}; separator="\n">
 self._predicates =
 preds
 pred = self._predicates.get(ruleIndex, None)
 if pred is not None:
 return pred(localctx, predIndex)
 else:
 raise Exception("No registered predicate for:" + str(ruleIndex))

<sempredFuncs.values; separator="\n">
<endif>
>>

parser_ctor(p) ::= <<
def __init__(self, input):
 super(<parser.name>, self).__init__(input)
 self.checkVersion("<file.ANTLRVersion>")
 self._interp = ParserATNSimulator(self, self.atn, self.decisionsToDFA, self.sharedContextCache)
 self._predicates = None

>>

/* This generates a private method since the actionIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleActionFunction(r, actions) ::= <<

def <r.name>_action(self, localctx , actionIndex):
<actions: {index|
<if(first(actions))>

```

```

 if actionIndex == <index>:
 <actions.(index)>
<elseif(rest(actions))>
 elif actionIndex == <index>:
 <actions.(index)>
<endif> }; separator="\n">
>>

/* This generates a private method
since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleSempredFunction(r, actions) ::= <<
def <r.name>_sempred(self, localctx, predIndex):
 <actions:{index|
<if(first(actions))>
 if predIndex == <index>:
 return <actions.(index)>
<elseif(rest(actions))>
 elif predIndex == <index>:
 return <actions.(index)>
<endif> }; separator="\n">

>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)
::= <<

<ruleCtx>

<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

def <currentRule.name>(self<currentRule.args:{a | , <a.name>}>):

 localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, self.state<currentRule.args:{a | , <a.name>}>)
 self.enterRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>)
 <namedActions.init>
 <locals; separator="\n">
 try:
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 <if(exceptions)>
 <exceptions; separator="\n">
 <else>
 except RecognitionException as re:
 localctx.exception = re
 self._errHandler.reportError(self, re)

```



```

 self._errHandler.recover(self, re)
 <endif>
 finally:
 <finallyAction>
 self.exitRule()
 return localctx

>>

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,
 namedActions,finallyAction,postamble) ::=
<<

<ruleCtx>
<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

def <currentRule.name>(self, _p=0<if(currentRule.args)>, <args:{a | , <a>}><endif>):
 _parentctx = self._ctx
 _parentState = self.state
 localctx = <parser.name>.<currentRule.ctxType>(self, self._ctx, _parentState<args:{a | , <a.name>}>)
 _prevctx = localctx
 _startState = <currentRule.startState>
 self.enterRecursionRule(localctx, <currentRule.startState>, self.RULE_<currentRule.name>, _p)
 <namedActions.init>
 <locals; separator="\n">
 try:
 <code>
 <postamble; separator="\n">
 <namedActions.after>
 except RecognitionException as re:
 localctx.exception = re
 self._errHandler.reportError(self, re)
 self._errHandler.recover(self, re)
 finally:
 <finallyAction>
 self.unrollRecursionContexts(_parentctx)
 return localctx

>>

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>localctx = <parser.name>.<currentOuterMostAltCodeBlock.altLabel>;
format="cap">Context(self, localctx)<endif>
self.enterOuterAlt(localctx, <currentOuterMostAltCodeBlock.alt.altNum>)
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

CodeBlockForAlt(currentAltCodeBlock, locals, preamble, ops) ::= <<

```

```
<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
>>
```

```
LL1AltBlock(choice, preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)>
= _input.LT(1)<endif>
<preamble; separator="\n">
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
 <alt>
 pass}; separator="\n1">
else:
 <error>

>>
```

```
LL1OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
token = self._input.LA(1)
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
 <alt>
 pass}; separator="\n1">
else:
 <error>

>>
```

```
LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
if <expr>:
 <alts; separator="\n">

<!else if (!(<followExpr>)) <error>!>
>>
```

```
LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<preamble; separator="\n">
while <loopExpr>:
 <alts; separator="\n">
```

```

self.state = <choice.loopBackStateNumber>
self._errHandler.sync(self)
<iteration>

>>

LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
<preamble; separator="\n">
while True:
 <alts; separator="\n">
 self.state = <choice.stateNumber> <! loopback/exit decision !>
 self._errHandler.sync(self)
 <iteration>
 if not (<loopExpr>):
 break

>>

// LL(*) stuff

AltBlock(choice, preamble, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = _input.LT(1)<endif>
<preamble; separator="\n">
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ == <i>:
 <alt>
 pass
}; separator="\n">

>>

OptionalBlock(choice, alts, error) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
la_ = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
<alts:{ alt |
if la_ ==
<i><if(!choice.ast.greedy)>+1<endif>:
 <alt>
}; separator="\n">

>>

```

```

StarBlock(choice, alts, sync, iteration) ::= <<
self.state = <choice.stateNumber>
self._errHandler.sync(self)
_alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
 if _alt==1<if(!choice.ast.greedy)>+1<endif>:
 <iteration>
 <alts> <! should only be one !>
 self.state = <choice.loopBackStateNumber>
 self._errHandler.sync(self)
 _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
>>

```

```

PlusBlock(choice, alts, error) ::= <<
self.state = <choice.blockStartStateNumber> <! alt block decision !>
self._errHandler.sync(self)
_alt = 1<if(!choice.ast.greedy)>+1<endif>
while _alt!=<choice.exitAlt> and _alt!=ATN.INVALID_ALT_NUMBER:
 <alts:{alt|
if _alt == <i><if(!choice.ast.greedy)>+1<endif>:
 <alt>
}; separator="\nel">
 else:
 <error>
 self.state = <choice.loopBackStateNumber>
 <! loopback/exit decision !>
 self._errHandler.sync(self)
 _alt = self._interp.adaptivePredict(self._input,<choice.decision>,self._ctx)
>>

```

```

Sync(s) ::= "sync(<s.expecting.name>)"

```

```

ThrowNoViableAlt(t) ::= "raise NoViableAltException(self)"

```

```

TestSetInline(s) ::= <<
<s.bitsets:{bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" or ">
>>

```

```

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

```

```

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <%

```

```
(<testShiftInRange({ <offsetShiftVar(s.varName, bits.shift)> })> and ((1 \<< <offsetShiftVar(s.varName, bits.shift)>) & (<bits.ttypes:{ ttype | (1 \<< <offsetShiftType(ttype, bits.shift)>); separator=" | ">) != 0) %>
```

```
isZero ::= [
 "0":true,
 default:false
]
```

```
offsetShiftVar(shiftAmount,
 offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
>%
```

```
offsetShiftType(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><parser.name>.<shiftAmount> - <offset><else><parser.name>.<shiftAmount><endif>
>%
```

```
// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ ttype | <s.varName>==<parser.name>.<ttype>}; separator=" or ">
>%
```

```
cases(ttypes) ::= <<
if token in [<ttypes:{ t | <parser.name>.<t>}; separator=", ">]:
>>
```

```
InvokeRule(r, argExprsChunks) ::= <<
self.state = <r.stateNumber>
<if(r.labels)><r.labels:{ l | <labelref(l)> =
}><endif>self.<r.name><(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)><endif><endif><argExprsChu
nks>
>>
```

```
MatchToken(m) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels:{ l | <labelref(l)> = }><endif>self.match(<parser.name>.<m.name>)
>>
```

```
MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"
```

```
MatchNotSet(m,
 expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"
```

```
CommonSetStuff(m, expr, capture, invert) ::= <<
self.state = <m.stateNumber>
<if(m.labels)><m.labels:{ l | <labelref(l)> = }>self._input.LT(1)<endif>
<capture>
```

```

<if(invert)>if <m.varName> \<= 0 or <expr><else>if not(<expr><endif>:
<if(m.labels)><m.labels:{1 | <labelref(l)> = }><else> <endif>self._errHandler.recoverInline(self)
else:
 self._errHandler.reportMatch(self)
 self.consume()
>>

```

```

Wildcard(w) ::= <<
self.state = <w.stateNumber>
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>self.matchWildcard()
>>

```

```
// ACTION STUFF
```

```
Action(a, foo, chunks) ::= "<chunks>"
```

```
ArgAction(a, chunks) ::= "<chunks>"
```

```

SemPred(p, chunks, failChunks) ::= <<
self.state = <p.stateNumber>
if not <chunks>:
 from antlr4.error.Errors import FailedPredicateException
 raise FailedPredicateException(self, <p.predicate><if(failChunks)>, <failChunks><elseif(p.msg)>,
<p.msg><endif>)
>>

```

```

ExceptionClause(e, catchArg, catchAction)
::= <<
catch (<catchArg>) {
 <catchAction>
}
>>

```

```
// lexer actions are not associated with model objects
```

```

LexerSkipCommand() ::= "skip()"
LexerMoreCommand() ::= "more()"
LexerPopModeCommand() ::= "popMode()"

```

```

LexerTypeCommand(arg, grammar) ::= "_type = <arg>"
LexerChannelCommand(arg, grammar) ::= "_channel = <arg>"
LexerModeCommand(arg, grammar) ::= "_mode = <arg>"
LexerPushModeCommand(arg, grammar) ::= "pushMode(<arg>)"

```

```

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "localctx.<a.name>"
LocalRef(a) ::= "localctx.<a.name>"

```

```

RetValRef(a) ::= "localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

TokenPropertyRef_text(t)
::= "(None if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.text)"
TokenPropertyRef_type(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.type)"
TokenPropertyRef_line(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.line)"
TokenPropertyRef_pos(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.column)"
TokenPropertyRef_channel(t) ::= "(0 if (<ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.channel)"
TokenPropertyRef_index(t) ::= "(0 if <ctx(t)>.<t.label> is None else <ctx(t)>.<t.label>.tokenIndex)"
TokenPropertyRef_int(t) ::= "(0 if <ctx(t)>.<t.label> is None else int(<ctx(t)>.<t.label>.text))"

RulePropertyRef_start(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.start)"
RulePropertyRef_stop(r) ::= "(None if <ctx(r)>.<r.label> is None else <ctx(r)>.<r.label>.stop)"
RulePropertyRef_text(r) ::= "(None if <ctx(r)>.<r.label> is None else
self._input.getText((<ctx(r)>.<r.label>.start,<ctx(r)>.<r.label>.stop)))"
RulePropertyRef_ctx(r)
::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "self"

ThisRulePropertyRef_start(r) ::= "localctx.start"
ThisRulePropertyRef_stop(r) ::= "localctx.stop"
ThisRulePropertyRef_text(r) ::= "self._input.getText((localctx.start, self._input.LT(-1)))"
ThisRulePropertyRef_ctx(r) ::= "localctx"
ThisRulePropertyRef_parser(r) ::= "self"

NonLocalAttrRef(s) ::= "getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::= "getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.append(<labelref(a.label)>)"

TokenDecl(t) ::= "self.<t.name> = None # <TokenLabelType()>"
TokenTypeDecl(t) ::= "self.<t.name> = 0 # <TokenLabelType()> type"
TokenListDecl(t) ::= "self.<t.name> = list() # of <TokenLabelType()>s"
RuleContextDecl(r) ::= "self.<r.name> = None # <r.ctxName>"
RuleContextListDecl(rdecl) ::= "self.<rdecl.name> = list() # of <rdecl.ctxName>s"

ContextTokenGetterDecl(t)
::= <<
def <t.name>(self):

```

```

 return self.getToken(<parser.name>.<t.name>, 0)
>>

// should never be called
ContextTokenListGetterDecl(t) ::= <<
def <t.name>_list(self):
 return self.getTokens(<parser.name>.<t.name>)
>>

ContextTokenListIndexedGetterDecl(t) ::= <<
def <t.name>(self, i=None):
 if i is None:
 return self.getTokens(<parser.name>.<t.name>)
 else:
 return self.getToken(<parser.name>.<t.name>, i)
>>

ContextRuleGetterDecl(r) ::= <<
def <r.name>(self):
 return self.getTypedRuleContext(<parser.name>.<r.ctxName>,0)

>>

// should never be called
ContextRuleListGetterDecl(r) ::= <<
def <r.name>_list(self):
 return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)

>>

ContextRuleListIndexedGetterDecl(r) ::= <<
def <r.name>(self, i=None):
 if i is None:
 return self.getTypedRuleContexts(<parser.name>.<r.ctxName>)
 else:
 return self.getTypedRuleContext(<parser.name>.<r.ctxName>,i)

>>

LexerRuleContext()
::= "RuleContext"

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenName>"

```



```

ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label) ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = self._input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = self._input.LA(1)"

StructDecl(struct,ctorAttrs,attrs,getters,dispatchMethods,interfaces,extensionMembers) ::= <<
class <struct.name>(<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif>):

 def __init__(self, parser, parent=None, invokingState=-1<struct.ctorAttrs:{a | <a.name>=None}>):
 super(<parser.name>.<struct.name>, self).__init__(parent, invokingState)
 self.parser = parser
 <attrs:{a | <a>}; separator="\n">
 <struct.ctorAttrs:{a | self.<a.name> = <a.name>}; separator="\n">

 <getters:{g | <g>};
 separator="\n\n">

 def getRuleIndex(self):
 return <parser.name>.RULE_<struct.derivedFromName>

<if(struct.provideCopyFrom)> <! don't need copy unless we have subclasses !>
 def copyFrom(self, ctx):
 super(<parser.name>.<struct.name>, self).copyFrom(ctx)
 <struct.attrs:{a | self.<a.name> = ctx.<a.name>}; separator="\n">

<endif>
 <dispatchMethods; separator="\n">
 <extensionMembers; separator="\n">

>>

AltLabelStructDecl(struct,attrs,getters,dispatchMethods) ::= <<
class <struct.name>(<currentRule.name; format="cap">Context):

 def __init__(self, parser, ctx): # actually a <parser.name>.<currentRule.name; format="cap">Context)
 super(<parser.name>.<struct.name>, self).__init__(parser)
 <attrs:{a | <a>}; separator="\n">
 self.copyFrom(ctx)

 <getters:{g | <g>}; separator="\n">

 <dispatchMethods; separator="\n">

>>

ListenerDispatchMethod(method) ::= <<

```

```

def <if(method.isEnter)>enter<else>exit<endif>Rule(self, listener):
 if hasattr(listener, "<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format='cap'>"):
 listener.<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName; format='cap'>(self)

>>

VisitorDispatchMethod(method) ::= <<
def accept(self, visitor):
 if hasattr(visitor, "visit<struct.derivedFromName; format='cap'>"):
 return visitor.visit<struct.derivedFromName; format='cap'>(self)
 else:
 return visitor.visitChildren(self)

>>

AttributeDecl(d) ::= "self.<d.name> = <if(d.initValue)><d.initValue><else>None<endif>"

/** If we don't know location of label def x, use this template */
labelref(x) ::= "<if(!x.isLocal)>localctx.<endif><x.name>"

/** For any action chunk, what is correctly-typed context struct ptr? */
ctx(actionChunk) ::= "localctx"

// used for left-recursive rules
recRuleAltPredicate(ruleName,opPrec) ::= "self.precpred(self._ctx, <opPrec>)"
recRuleSetReturnAction(src,name) ::= "$<name>=<src>.<name>"
recRuleSetStopToken()
 ::= "self._ctx.stop = self._input.LT(-1)"

recRuleAltStartAction(ruleName, ctxName, label) ::= <<
localctx = <parser.name>.<ctxName>Context(self, _parentctx, _parentState)
<if(label)>localctx.<label> = _prevctx<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
localctx = <parser.name>.<currentAltLabel; format='cap'>Context(self, <parser.name>.<ruleName;
format='cap'>Context(self, _parentctx, _parentState))
<if(label)>
<if(isListLabel)>
localctx.<label>.append(_prevctx)
<else>
localctx.<label> = _prevctx
<endif>
<endif>
self.pushNewRecursionContext(localctx, _startState, self.RULE_<ruleName>)
>>

```

```

recRuleReplaceContext(ctxName) ::= <<
localctx = <parser.name>.<ctxName>Context(self, localctx)
self._ctx = localctx
_prevctx = localctx
>>

```

```

recRuleSetPrevCtx() ::= <<
if self._parseListeners is not None:
 self.triggerExitRuleEvent()
_prevctx = localctx
>>

```

```

LexerFile(lexerFile,
lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
encoding: utf-8
from __future__ import print_function
from antlr4 import *
from io import StringIO

<namedActions.header>

<lexer>
>>

```

```

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<

<atn>

class <lexer.name>(<if(superClass)><superClass><else>Lexer<endif>):

 atn = ATNDeserializer().deserialize(serializedATN())

 decisionsToDFA = [DFA(ds, i) for i, ds in enumerate(atn.decisionToState)]

 <rest(lexer.modes):{m| <m> = <i>}; separator="\n">

 <lexer.tokens:{k | <k> = <lexer.tokens.(k)>}; separator="\n", wrap, anchor>

 modeNames = [<lexer.modes:{m| u"<m>"}; separator=", ", wrap, anchor>]

 literalNames = [u"\<INVALID>",
 <lexer.literalNames:{t | u<t>}; separator=", ", wrap, anchor>]

 symbolicNames = [u"\<INVALID>",
 <lexer.symbolicNames:{t | u<t>}; separator=", ", wrap, anchor>]

```

```

ruleNames = [<lexer.ruleNames:{r
| u"<r>"}; separator=", ", wrap, anchor>]

grammarFileName = u"<lexer.grammarFileName>"

def __init__(self, input=None):
 super(<lexer.name>, self).__init__(input)
 self.checkVersion("<lexerFile.ANTLRVersion>")
 self._interp = LexerATNSimulator(self, self.atn, self.decisionsToDFA, PredictionContextCache())
 self._actions = None
 self._predicates = None

<namedActions.members>

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>

>>

SerializedATN(model) ::= <<
<! only one segment, can be inlined !>

def serializedATN():
 with StringIO() as buf:
 buf.write(u"<model.serialized; wrap={ }<n> buf.write(u" }>")
 return buf.getvalue()

>>

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/
initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>

codeFileExtension() ::= ".py"

Found in path(s):
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/Python2/Python2.stg
No license file was found, but licenses were detected in source scan.

/*
* [The "BSD license"]
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```

```

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*/

```

```

/** The definitive ANTLR v3 tree grammar to walk/visit ANTLR v4 grammars.

```

```

* Parses trees created by ANTLRParser.g.
*
* Rather than have multiple tree grammars, one for each visit, I'm
* creating this generic visitor that knows about context. All of the
* boilerplate pattern recognition is done here. Then, subclasses can
* override the methods they care about.

```

```

This prevents a lot of the same

```

```

* context tracking stuff like "set current alternative for current
* rule node" that is repeated in lots of tree filters.

```

```

*/
tree grammar GrammarTreeVisitor;
options {
language = Java;
tokenVocab = ANTLRParser;
ASTLabelType = GrammarAST;
}

```

```

// Include the copyright in this source and also the generated source

```

```

@header {

```

```

/*

```

```

[The "BSD license"]

```

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\*/

```
package org.antlr.v4.parse;
import org.antlr.v4.Tool;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
import java.lang.reflect.InvocationTargetException;
import java.lang.reflect.Method;
}

@members
{
public String grammarName;
public GrammarAST currentRuleAST;
public String currentModeName = LexerGrammar.DEFAULT_MODE_NAME;
public String currentRuleName;
public GrammarAST currentOuterAltRoot;
public int currentOuterAltNumber = 1; // 1..n
public int rewriteEBNFLevel = 0;

public GrammarTreeVisitor() { this(null); }
```

```
// Should be abstract but can't make gen'd parser abstract;
```

```

// subclasses should implement else everything goes to stderr!
public ErrorManager getErrorManager() { return null; }

public void visitGrammar(GrammarAST t) { visit(t, "grammarSpec"); }
public void visit(GrammarAST t, String ruleName) {
 CommonTreeNodeStream nodes = new CommonTreeNodeStream(new GrammarASTAdaptor(), t);
 setTreeNodeStream(nodes);
 try {
 Method m = getClass().getMethod(ruleName);
 m.invoke(this);
 }
 catch (Throwable e) {
 ErrorManager errMgr = getErrorManager();
 if (e instanceof InvocationTargetException) {
 e = e.getCause();
 }
 //e.printStackTrace(System.err);
 if
 (errMgr==null) {
 System.err.println("can't find rule "+ruleName+
 " or tree structure error: "+t.toStringTree()
);
 e.printStackTrace(System.err);
 }
 else errMgr.toolError(ErrorType.INTERNAL_ERROR, e);
 }
}

public void discoverGrammar(GrammarRootAST root, GrammarAST ID) { }
public void finishPrequels(GrammarAST firstPrequel) { }
public void finishGrammar(GrammarRootAST root, GrammarAST ID) { }

public void grammarOption(GrammarAST ID, GrammarAST valueAST) { }
public void ruleOption(GrammarAST ID, GrammarAST valueAST) { }
public void blockOption(GrammarAST ID, GrammarAST valueAST) { }
public void defineToken(GrammarAST ID) { }
public void defineChannel(GrammarAST ID) { }
public void globalNamedAction(GrammarAST scope, GrammarAST ID, ActionAST action) { }
public void importGrammar(GrammarAST label, GrammarAST ID) { }

public void modeDef(GrammarAST m, GrammarAST ID) { }

public void discoverRules(GrammarAST rules) { }
public void finishRules(GrammarAST
 rule) { }
public void discoverRule(RuleAST rule, GrammarAST ID, List<GrammarAST> modifiers,
 ActionAST arg, ActionAST returns, GrammarAST thrws,
 GrammarAST options, ActionAST locals,

```

```

List<GrammarAST> actions,
GrammarAST block) { }
public void finishRule(RuleAST rule, GrammarAST ID, GrammarAST block) { }
public void discoverLexerRule(RuleAST rule, GrammarAST ID, List<GrammarAST> modifiers,
GrammarAST block) { }
public void finishLexerRule(RuleAST rule, GrammarAST ID, GrammarAST block) { }
public void ruleCatch(GrammarAST arg, ActionAST action) { }
public void finallyAction(ActionAST action) { }
public void discoverOuterAlt(AltAST alt) { }
public void finishOuterAlt(AltAST alt) { }
public void discoverAlt(AltAST alt) { }
public void finishAlt(AltAST alt) { }

public void ruleRef(GrammarAST ref, ActionAST arg) { }
public void tokenRef(TerminalAST ref) { }
public void elementOption(GrammarASTWithOptions t, GrammarAST ID, GrammarAST
valueAST) { }
public void stringRef(TerminalAST ref) { }
public void wildcardRef(GrammarAST ref) { }
public void actionInAlt(ActionAST action) { }
public void sempredInAlt(PredAST pred) { }
public void label(GrammarAST op, GrammarAST ID, GrammarAST element) { }
public void lexerCallCommand(int outerAltNumber, GrammarAST ID, GrammarAST arg) { }
public void lexerCommand(int outerAltNumber, GrammarAST ID) { }

protected void enterGrammarSpec(GrammarAST tree) { }
protected void exitGrammarSpec(GrammarAST tree) { }

protected void enterPrequelConstructs(GrammarAST tree) { }
protected void exitPrequelConstructs(GrammarAST tree) { }

protected void enterPrequelConstruct(GrammarAST tree) { }
protected void exitPrequelConstruct(GrammarAST tree) { }

protected void enterOptionsSpec(GrammarAST tree) { }
protected void exitOptionsSpec(GrammarAST tree) { }

protected void enterOption(GrammarAST tree) { }
protected void exitOption(GrammarAST tree) { }

protected void enterOptionValue(GrammarAST
tree) { }
protected void exitOptionValue(GrammarAST tree) { }

protected void enterDelegateGrammars(GrammarAST tree) { }
protected void exitDelegateGrammars(GrammarAST tree) { }

protected void enterDelegateGrammar(GrammarAST tree) { }

```



protected void exitDelegateGrammar(GrammarAST tree) { }

protected void enterTokensSpec(GrammarAST tree) { }

protected void exitTokensSpec(GrammarAST tree) { }

protected void enterTokenSpec(GrammarAST tree) { }

protected void exitTokenSpec(GrammarAST tree) { }

protected void enterChannelsSpec(GrammarAST tree) { }

protected void exitChannelsSpec(GrammarAST tree) { }

protected void enterChannelSpec(GrammarAST tree) { }

protected void exitChannelSpec(GrammarAST tree) { }

protected void enterAction(GrammarAST tree) { }

protected void exitAction(GrammarAST tree) { }

protected void enterRules(GrammarAST tree) { }

protected void exitRules(GrammarAST tree) { }

protected void enterMode(GrammarAST tree) { }

protected void exitMode(GrammarAST tree) { }

protected

void enterLexerRule(GrammarAST tree) { }

protected void exitLexerRule(GrammarAST tree) { }

protected void enterRule(GrammarAST tree) { }

protected void exitRule(GrammarAST tree) { }

protected void enterExceptionGroup(GrammarAST tree) { }

protected void exitExceptionGroup(GrammarAST tree) { }

protected void enterExceptionHandler(GrammarAST tree) { }

protected void exitExceptionHandler(GrammarAST tree) { }

protected void enterFinallyClause(GrammarAST tree) { }

protected void exitFinallyClause(GrammarAST tree) { }

protected void enterLocals(GrammarAST tree) { }

protected void exitLocals(GrammarAST tree) { }

protected void enterRuleReturns(GrammarAST tree) { }

protected void exitRuleReturns(GrammarAST tree) { }

protected void enterThrowsSpec(GrammarAST tree) { }

protected void exitThrowsSpec(GrammarAST tree) { }

```
protected void enterRuleAction(GrammarAST tree) { }
protected void exitRuleAction(GrammarAST tree) { }
```

```
protected void enterRuleModifier(GrammarAST tree) { }
protected
void exitRuleModifier(GrammarAST tree) { }
```

```
protected void enterLexerRuleBlock(GrammarAST tree) { }
protected void exitLexerRuleBlock(GrammarAST tree) { }
```

```
protected void enterRuleBlock(GrammarAST tree) { }
protected void exitRuleBlock(GrammarAST tree) { }
```

```
protected void enterLexerOuterAlternative(AltAST tree) { }
protected void exitLexerOuterAlternative(AltAST tree) { }
```

```
protected void enterOuterAlternative(AltAST tree) { }
protected void exitOuterAlternative(AltAST tree) { }
```

```
protected void enterLexerAlternative(GrammarAST tree) { }
protected void exitLexerAlternative(GrammarAST tree) { }
```

```
protected void enterLexerElements(GrammarAST tree) { }
protected void exitLexerElements(GrammarAST tree) { }
```

```
protected void enterLexerElement(GrammarAST tree) { }
protected void exitLexerElement(GrammarAST tree) { }
```

```
protected void enterLabeledLexerElement(GrammarAST tree) { }
protected void exitLabeledLexerElement(GrammarAST tree) { }
```

```
protected void enterLexerBlock(GrammarAST tree) { }
protected
void exitLexerBlock(GrammarAST tree) { }
```

```
protected void enterLexerAtom(GrammarAST tree) { }
protected void exitLexerAtom(GrammarAST tree) { }
```

```
protected void enterActionElement(GrammarAST tree) { }
protected void exitActionElement(GrammarAST tree) { }
```

```
protected void enterAlternative(AltAST tree) { }
protected void exitAlternative(AltAST tree) { }
```

```
protected void enterLexerCommand(GrammarAST tree) { }
protected void exitLexerCommand(GrammarAST tree) { }
```

```
protected void enterLexerCommandExpr(GrammarAST tree) { }
```

protected void exitLexerCommandExpr(GrammarAST tree) { }

protected void enterElement(GrammarAST tree) { }

protected void exitElement(GrammarAST tree) { }

protected void enterAstOperand(GrammarAST tree) { }

protected void exitAstOperand(GrammarAST tree) { }

protected void enterLabeledElement(GrammarAST tree) { }

protected void exitLabeledElement(GrammarAST tree) { }

protected void enterSubrule(GrammarAST tree) { }

protected void exitSubrule(GrammarAST tree) { }

protected

void enterLexerSubrule(GrammarAST tree) { }

protected void exitLexerSubrule(GrammarAST tree) { }

protected void enterBlockSuffix(GrammarAST tree) { }

protected void exitBlockSuffix(GrammarAST tree) { }

protected void enterEbnfSuffix(GrammarAST tree) { }

protected void exitEbnfSuffix(GrammarAST tree) { }

protected void enterAtom(GrammarAST tree) { }

protected void exitAtom(GrammarAST tree) { }

protected void enterBlockSet(GrammarAST tree) { }

protected void exitBlockSet(GrammarAST tree) { }

protected void enterSetElement(GrammarAST tree) { }

protected void exitSetElement(GrammarAST tree) { }

protected void enterBlock(GrammarAST tree) { }

protected void exitBlock(GrammarAST tree) { }

protected void enterRuleref(GrammarAST tree) { }

protected void exitRuleref(GrammarAST tree) { }

protected void enterRange(GrammarAST tree) { }

protected void exitRange(GrammarAST tree) { }

protected void enterTerminal(GrammarAST tree) { }

protected void exitTerminal(GrammarAST tree) { }

protected

void enterElementOptions(GrammarAST tree) { }

protected void exitElementOptions(GrammarAST tree) { }

```
protected void enterElementOption(GrammarAST tree) { }
protected void exitElementOption(GrammarAST tree) { }
```

```
@Override
public void traceIn(String ruleName, int ruleIndex) {
 System.err.println("enter "+ruleName+": "+input.LT(1));
}
```

```
@Override
public void traceOut(String ruleName, int ruleIndex) {
 System.err.println("exit "+ruleName+": "+input.LT(1));
}
}
```

```
grammarSpec
```

```
@init {
 enterGrammarSpec($start);
}
@after {
 exitGrammarSpec($start);
}
: ^(GRAMMAR ID {grammarName=$ID.text;}
 {discoverGrammar((GrammarRootAST)$GRAMMAR, $ID);}
 prequelConstructs
 {finishPrequels($prequelConstructs.firstOne);}
 rules mode*
 {finishGrammar((GrammarRootAST)$GRAMMAR, $ID);}
)
;
```

```
prequelConstructs returns [GrammarAST firstOne=null]
```

```
@init {
 enterPrequelConstructs($start);
}
@after {
 exitPrequelConstructs($start);
}
: {$firstOne=$start;} prequelConstruct+
|
;
```

```
prequelConstruct
```

```
@init
{
 enterPrequelConstructs($start);
}
@after {
```

```

exitPrequelConstructs($start);
}
: optionsSpec
| delegateGrammars
| tokensSpec
| channelsSpec
| action
;

```

```

optionsSpec
@init {
enterOptionsSpec($start);
}
@after {
exitOptionsSpec($start);
}
: ^(OPTIONS option*)
;

```

```

option
@init {
enterOption($start);
boolean rule = inContext("RULE ...");
boolean block = inContext("BLOCK ...");
}
@after {
exitOption($start);
}
: ^(a=ASSIGN ID v=optionValue)
{
if (block) blockOption($ID, $v.start); // most specific first
else if (rule) ruleOption($ID, $v.start);
else grammarOption($ID, $v.start);
}
;

```

```

optionValue returns [String v]
@init {
enterOptionValue($start);
$v = $start.token.getText();
}
@after {
exitOptionValue($start);
}
: ID
| STRING_LITERAL
| INT
;

```

```

delegateGrammars
@init {
 enterDelegateGrammars($start);
}
@after {
 exitDelegateGrammars($start);
}
: ^(IMPORT
 delegateGrammar+)
;

```

```

delegateGrammar
@init {
 enterDelegateGrammar($start);
}
@after {
 exitDelegateGrammar($start);
}
: ^(ASSIGN label=ID id=ID {importGrammar($label, $id);}
 | id=ID {importGrammar(null, $id);}
;

```

```

tokensSpec
@init {
 enterTokensSpec($start);
}
@after {
 exitTokensSpec($start);
}
: ^(TOKENS_SPEC tokenSpec+)
;

```

```

tokenSpec
@init {
 enterTokenSpec($start);
}
@after {
 exitTokenSpec($start);
}
: ID {defineToken($ID);}
;

```

```

channelsSpec
@init {
 enterChannelsSpec($start);
}
@after {

```

```

exitChannelsSpec($start);
}
: ^(CHANNELS channelSpec+)
;

channelSpec
@init {
enterChannelSpec($start);
}
@after {
exitChannelSpec($start);
}
: ID {defineChannel($ID);}
;

action
@init {
enterAction($start);
}
@after {
exitAction($start);
}
: ^(AT sc=ID? name=ID ACTION) {globalNamedAction($sc, $name, (ActionAST)$ACTION);}
;

rules
@init {
enterRules($start);
}
@after {
exitRules($start);
}
: ^(RULES {discoverRules($RULES);} (rule|lexerRule)*
{finishRules($RULES);})
;

mode
@init {
enterMode($start);
}
@after {
exitMode($start);
}
: ^(MODE ID {currentModeName=$ID.text; modeDef($MODE, $ID);} lexerRule*)
;

lexerRule
@init {

```

```

enterLexerRule($start);
List<GrammarAST> mods = new ArrayList<GrammarAST>();
currentOuterAltNumber=0;
}
@after {
exitLexerRule($start);
}
: ^(RULE TOKEN_REF
{currentRuleName=$TOKEN_REF.text; currentRuleAST=$RULE;}
(^(RULEMODIFIERS m=FRAGMENT {mods.add($m);}))?
{discoverLexerRule((RuleAST)$RULE, $TOKEN_REF, mods, (GrammarAST)input.LT(1));}
lexerRuleBlock
{
finishLexerRule((RuleAST)$RULE, $TOKEN_REF, $lexerRuleBlock.start);
currentRuleName=null; currentRuleAST=null;
}
)
;

rule
@init {
enterRule($start);
List<GrammarAST> mods = new ArrayList<GrammarAST>();
List<GrammarAST> actions = new ArrayList<GrammarAST>(); // track roots
currentOuterAltNumber=0;
}
@after {
exitRule($start);
}
: ^(RULE RULE_REF {currentRuleName=$RULE_REF.text;
currentRuleAST=$RULE;}
(^(RULEMODIFIERS (m=ruleModifier {mods.add($m.start);}))+)?
ARG_ACTION?
ret=ruleReturns?
thr=throwsSpec?
loc=locals?
(opts=optionsSpec
| a=ruleAction {actions.add($a.start);}
)*
{discoverRule((RuleAST)$RULE, $RULE_REF, mods, (ActionAST)$ARG_ACTION,
$ret.start!=null?(ActionAST)$ret.start.getChild(0):null,
$thr.start, $opts.start,
$loc.start!=null?(ActionAST)$loc.start.getChild(0):null,
actions, (GrammarAST)input.LT(1));}
ruleBlock exceptionGroup
{finishRule((RuleAST)$RULE, $RULE_REF, $ruleBlock.start); currentRuleName=null; currentRuleAST=null;}
)
;

```



```

exceptionGroup
@init {
 enterExceptionGroup($start);
}
@after {
 exitExceptionGroup($start);
}
: exceptionHandler* finallyClause?
;

```

```

exceptionHandler
@init {
 enterExceptionHandler($start);
}
@after {
 exitExceptionHandler($start);
}
: ^(CATCH ARG_ACTION ACTION) {ruleCatch($ARG_ACTION,
(ActionAST)$ACTION);}
;

```

```

finallyClause
@init {
 enterFinallyClause($start);
}
@after {
 exitFinallyClause($start);
}
: ^(FINALLY ACTION) {finallyAction((ActionAST)$ACTION);}
;

```

```

locals
@init {
 enterLocals($start);
}
@after {
 exitLocals($start);
}
: ^(LOCALS ARG_ACTION)
;

```

```

ruleReturns
@init {
 enterRuleReturns($start);
}
@after {
 exitRuleReturns($start);
}

```

```
}
: ^(RETURNS ARG_ACTION)
;
```

```
throwsSpec
@init {
 enterThrowsSpec($start);
}
@after {
 exitThrowsSpec($start);
}
: ^(THROWS ID+)
;
```

```
ruleAction
@init {
 enterRuleAction($start);
}
@after {
 exitRuleAction($start);
}
: ^(AT ID ACTION)
;
```

```
ruleModifier
@init {
 enterRuleModifier($start);
}
@after {
 exitRuleModifier($start);
}
: PUBLIC
 | PRIVATE
 | PROTECTED
 | FRAGMENT
;
```

```
lexerRuleBlock
@init {
 enterLexerRuleBlock($start);
}
@after {
 exitLexerRuleBlock($start);
}
: ^(BLOCK
 ({
 currentOuterAltRoot = (GrammarAST)input.LT(1);
 currentOuterAltNumber++;
```

```

 }
 lexerOuterAlternative
)+
)
;

ruleBlock
@init {
 enterRuleBlock($start);
}
@after {
 exitRuleBlock($start);
}
: ^(BLOCK
 ({
 currentOuterAltRoot = (GrammarAST)input.LT(1);
 currentOuterAltNumber++;
 }
 outerAlternative
)+
)
;

lexerOuterAlternative
@init {
 enterLexerOuterAlternative((AltAST)$start);
 discoverOuterAlt((AltAST)$start);
}
@after {
 finishOuterAlt((AltAST)$start);
 exitLexerOuterAlternative((AltAST)$start);
}
: lexerAlternative
;

outerAlternative
@init {
 enterOuterAlternative((AltAST)$start);
 discoverOuterAlt((AltAST)$start);
}
@after {
 finishOuterAlt((AltAST)$start);
 exitOuterAlternative((AltAST)$start);
}
: alternative
;

```

```

lexerAlternative
@init {
 enterLexerAlternative($start);
}
@after {
 exitLexerAlternative($start);
}
: ^(LEXER_ALT_ACTION lexerElements lexerCommand+)
 | lexerElements
;

```

```

lexerElements
@init {
 enterLexerElements($start);
}
@after {
 exitLexerElements($start);
}
: ^(ALT lexerElement+)
;

```

```

lexerElement
@init {
 enterLexerElement($start);
}
@after {
 exitLexerElement($start);
}
: labeledLexerElement
 | lexerAtom
 | lexerSubrule
 | ACTION {actionInAlt((ActionAST)$ACTION);}
 | SEMPRED {sempredInAlt((PredAST)$SEMPRED);}
 | ^(ACTION elementOptions) {actionInAlt((ActionAST)$ACTION);}
 | ^(SEMPRED elementOptions) {sempredInAlt((PredAST)$SEMPRED);}
 | EPSILON
;

```

```

labeledLexerElement
@init {
 enterLabeledLexerElement($start);
}
@after {
 exitLabeledLexerElement($start);
}
: ^((ASSIGN|PLUS_ASSIGN) ID (lexerAtom|block))
;

```

```
lexerBlock
@init {
 enterLexerBlock($start);
}
@after {
 exitLexerBlock($start);
}
: ^(BLOCK optionsSpec? lexerAlternative+)
;
```

```
lexerAtom
@init {
 enterLexerAtom($start);
}
@after {
 exitLexerAtom($start);
}
: terminal
| ^(NOT blockSet)
| blockSet
| ^(WILDCARD elementOptions)
| WILDCARD
| LEXER_CHAR_SET
| range
| ruleref
;
```

```
actionElement
@init {
 enterActionElement($start);
}
@after
{
 exitActionElement($start);
}
: ACTION
| ^(ACTION elementOptions)
| SEMPRED
| ^(SEMPRED elementOptions)
;
```

```
alternative
@init {
 enterAlternative((AltAST)$start);
 discoverAlt((AltAST)$start);
}
@after {
 finishAlt((AltAST)$start);
}
```

```

exitAlternative((AltAST)$start);
}
: ^(ALT elementOptions? element+)
| ^(ALT elementOptions? EPSILON)
;

lexerCommand
@init {
enterLexerCommand($start);
}
@after {
exitLexerCommand($start);
}
: ^(LEXER_ACTION_CALL ID lexerCommandExpr)
 {lexerCallCommand(currentOuterAltNumber, $ID, $lexerCommandExpr.start);}
| ID
 {lexerCommand(currentOuterAltNumber, $ID);}
;

lexerCommandExpr
@init {
enterLexerCommandExpr($start);
}
@after {
exitLexerCommandExpr($start);
}
: ID
| INT
;

element
@init {
enterElement($start);
}
@after {
exitElement($start);
}
: labeledElement
| atom
| subrule
| ACTION {actionInAlt((ActionAST)$ACTION);}
| SEMPRED {sempredInAlt((PredAST)$SEMPRED);}
|
 ^(ACTION elementOptions) {actionInAlt((ActionAST)$ACTION);}
| ^(SEMPRED elementOptions) {sempredInAlt((PredAST)$SEMPRED);}

| ^(NOT blockSet)
| ^(NOT block)

```

;

astOperand

```
@init {
 enterAstOperand($start);
}
@after {
 exitAstOperand($start);
}
: atom
| ^(NOT blockSet)
| ^(NOT block)
;
```

labeledElement

```
@init {
 enterLabeledElement($start);
}
@after {
 exitLabeledElement($start);
}
: ^((ASSIGN|PLUS_ASSIGN) ID element) {label($start, $ID, $element.start);}
;
```

subrule

```
@init {
 enterSubrule($start);
}
@after {
 exitSubrule($start);
}
: ^(blockSuffix block)
| block
;
```

lexerSubrule

```
@init {
 enterLexerSubrule($start);
}
@after {
 exitLexerSubrule($start);
}
: ^(blockSuffix lexerBlock)
| lexerBlock
;
```

blockSuffix

```
@init {
```

```
enterBlockSuffix($start);
}
@after {
exitBlockSuffix($start);
}
: ebnfSuffix
;
```

```
ebnfSuffix
@init {
enterEbnfSuffix($start);
}
@after {
exitEbnfSuffix($start);
}
: OPTIONAL
| CLOSURE
| POSITIVE_CLOSURE
;
```

```
atom
@init {
enterAtom($start);
}
@after
{
exitAtom($start);
}
: ^(DOT ID terminal)
| ^(DOT ID ruleref)
| ^(WILDCARD elementOptions) {wildcardRef($WILDCARD);}
| WILDCARD {wildcardRef($WILDCARD);}
| terminal
| blockSet
| ruleref
;
```

```
blockSet
@init {
enterBlockSet($start);
}
@after {
exitBlockSet($start);
}
: ^(SET setElement+)
;
```

```
setElement
```



```

@init {
 enterSetElement($start);
}
@after {
 exitSetElement($start);
}
: ^(STRING_LITERAL elementOptions) {stringRef((TerminalAST)$STRING_LITERAL);}
| ^(TOKEN_REF elementOptions) {tokenRef((TerminalAST)$TOKEN_REF);}
| STRING_LITERAL {stringRef((TerminalAST)$STRING_LITERAL);}
| TOKEN_REF {tokenRef((TerminalAST)$TOKEN_REF);}
| ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
{
 stringRef((TerminalAST)$a);
 stringRef((TerminalAST)$b);
}
| LEXER_CHAR_SET
;

```

block

```

@init {
 enterBlock($start);
}
@after {
 exitBlock($start);
}
: ^(BLOCK optionsSpec? ruleAction* ACTION? alternative+)
;

```

ruleref

```

@init {
 enterRuleref($start);
}
@after {
 exitRuleref($start);
}
: ^(RULE_REF arg=ARG_ACTION? elementOptions?)
{
 ruleRef($RULE_REF, (ActionAST)$ARG_ACTION);
 if ($arg!=null) actionInAlt((ActionAST)$arg);
}
;

```

range

```

@init {
 enterRange($start);
}
@after {
 exitRange($start);
}

```

```

}
: ^(RANGE STRING_LITERAL STRING_LITERAL)
;

terminal
@init {
enterTerminal($start);
}
@after {
exitTerminal($start);
}
: ^(STRING_LITERAL elementOptions)
 {stringRef((TerminalAST)$STRING_LITERAL);}
| STRING_LITERAL {stringRef((TerminalAST)$STRING_LITERAL);}
| ^(TOKEN_REF elementOptions) {tokenRef((TerminalAST)$TOKEN_REF);}
| TOKEN_REF {tokenRef((TerminalAST)$TOKEN_REF);}
;

elementOptions
@init {
enterElementOptions($start);
}
@after {
exitElementOptions($start);
}
: ^(ELEMENT_OPTIONS elementOption[(GrammarASTWithOptions)$start.getParent()]*)
;

elementOption[GrammarASTWithOptions t]
@init {
enterElementOption($start);
}
@after
{
exitElementOption($start);
}
: ID {elementOption(t, $ID, null);}
| ^(ASSIGN id=ID v=ID) {elementOption(t, $id, $v);}
| ^(ASSIGN ID v=STRING_LITERAL) {elementOption(t, $ID, $v);}
| ^(ASSIGN ID v=ACTION) {elementOption(t, $ID, $v);}
| ^(ASSIGN ID v=INT) {elementOption(t, $ID, $v);}
;

```

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/GrammarTreeVisitor.g

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```

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 */

```

```

tree grammar ATNBuilder;
options {
 language = Java;
 tokenVocab = ANTLRParser;
 ASTLabelType = GrammarAST;
 // filter = true;
}

```

```

// Include the copyright in this source and also the generated source
@header {
/*
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```

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\*/

```
package org.antlr.v4.parse;
import org.antlr.v4.tool.*;
import org.antlr.v4.tool.ast.*;
import org.antlr.v4.automata.ATNFactory;
}
```

```
@members {
 ATNFactory factory;
 public ATNBuilder(TreeNodeStream input, ATNFactory factory) {
 this(input);
 this.factory = factory;
 }
}
```

```
dummy : block[null] ; // avoid error about no start rule
```

```
ruleBlock[GrammarAST ebnfRoot] returns [ATNFactory.Handle p]
```

```
@init {
 List<ATNFactory.Handle> alts = new ArrayList<ATNFactory.Handle>();
 int alt = 1;
 factory.setCurrentOuterAlt(alt);
}
: ^(BLOCK
 (^ (OPTIONS .*))?
 (a=alternative
 {alts.add($a.p); factory.setCurrentOuterAlt(++alt);}
)+
)
```

```

 {$p = factory.block((BlockAST)$BLOCK, ebnfRoot, alts);}
;

block[GrammarAST ebnfRoot] returns [ATNFactory.Handle p]
@init {List<ATNFactory.Handle> alts = new ArrayList<ATNFactory.Handle>();}
: ^(BLOCK (^ (OPTIONS .*))? (a=alternative {alts.add($a.p);})+
 {$p = factory.block((BlockAST)$BLOCK, ebnfRoot, alts);}
;

alternative returns [ATNFactory.Handle p]
@init {List<ATNFactory.Handle> els = new ArrayList<ATNFactory.Handle>();}
: ^(LEXER_ALT_ACTION a=alternative lexerCommands)
 {$p = factory.lexerAltCommands($a.p,$lexerCommands.p);}
| ^(ALT elementOptions? EPSILON) {$p = factory.epsilon($EPSILON);}
| ^(ALT elementOptions? (e=element {els.add($e.p);})+) {$p = factory.alt(els);}
;

lexerCommands returns [ATNFactory.Handle p]
@init {List<ATNFactory.Handle> cmds = new ArrayList<ATNFactory.Handle>();}
: (c=lexerCommand {if ($c.cmd != null) cmds.add($c.cmd);})+
 {
 $p = factory.alt(cmds);
 }
;

lexerCommand returns
[ATNFactory.Handle cmd]
: ^(LEXER_ACTION_CALL ID lexerCommandExpr)
 {$cmd = factory.lexerCallCommand($ID, $lexerCommandExpr.start);}
| ID
 {$cmd = factory.lexerCommand($ID);}
;

lexerCommandExpr
: ID
| INT
;

element returns [ATNFactory.Handle p]
: labeledElement {$p = $labeledElement.p;}
| atom {$p = $atom.p;}
| subrule {$p = $subrule.p;}
| ACTION {$p = factory.action((ActionAST)$ACTION);}
| SEMPRED {$p = factory.sempred((PredAST)$SEMPRED);}
| ^(ACTION .) {$p = factory.action((ActionAST)$ACTION);}
| ^(SEMPRED .) {$p = factory.sempred((PredAST)$SEMPRED);}
| ^(NOT b=blockSet[true]) {$p = $b.p;}
| LEXER_CHAR_SET {$p = factory.charSetLiteral($start);}

```

```

;

astOperand returns [ATNFactory.Handle p]
: atom {$p = $atom.p;}
| ^(NOT blockSet[true]) {$p = $blockSet.p;}
;

labeledElement returns [ATNFactory.Handle p]
: ^(ASSIGN ID element) {$p = factory.label($element.p);}
| ^(PLUS_ASSIGN ID element)
 {$p = factory.listLabel($element.p);}
;

subrule returns [ATNFactory.Handle p]
: ^(OPTIONAL block[$start]) {$p = $block.p;}
| ^(CLOSURE block[$start]) {$p = $block.p;}
| ^(POSITIVE_CLOSURE block[$start]) {$p = $block.p;}
| block[null] {$p = $block.p;}
;

blockSet[boolean invert] returns [ATNFactory.Handle p]
@init {List<GrammarAST> alts = new ArrayList<GrammarAST>();}
: ^(SET (setElement {alts.add($setElement.start);})+) {$p = factory.set($start, alts, $invert);}
;

/** Don't combine with atom otherwise it will build spurious ATN nodes */
setElement
: ^(STRING_LITERAL .)
| ^(TOKEN_REF .)
| STRING_LITERAL
| TOKEN_REF
| ^(RANGE a=STRING_LITERAL b=STRING_LITERAL)
| LEXER_CHAR_SET
;

atom returns [ATNFactory.Handle p]
: range {$p = $range.p;}
| ^(DOT ID terminal) {$p = $terminal.p;}
| ^(DOT ID ruleref) {$p = $ruleref.p;}
| ^(WILDCARD .) {$p = factory.wildcard($start);}
| WILDCARD {$p = factory.wildcard($start);}
| blockSet[false] {$p
= $blockSet.p;}
| terminal {$p = $terminal.p;}
| ruleref {$p = $ruleref.p;}
;

ruleref returns [ATNFactory.Handle p]

```

```

: ^(RULE_REF ARG_ACTION? ^(ELEMENT_OPTIONS .*)) {$p = factory.ruleRef($RULE_REF);}
| ^(RULE_REF ARG_ACTION?) {$p = factory.ruleRef($RULE_REF);}
| RULE_REF {$p = factory.ruleRef($RULE_REF);}
;

```

range returns [ATNFactory.Handle p]

```

: ^(RANGE a=STRING_LITERAL b=STRING_LITERAL) {$p = factory.range($a,$b);}
;

```

terminal returns [ATNFactory.Handle p]

```

: ^(STRING_LITERAL .) {$p = factory.stringLiteral((TerminalAST)$start);}
| STRING_LITERAL {$p = factory.stringLiteral((TerminalAST)$start);}
| ^(TOKEN_REF ARG_ACTION .) {$p = factory.tokenRef((TerminalAST)$start);}
| ^(TOKEN_REF .) {$p = factory.tokenRef((TerminalAST)$start);}
| TOKEN_REF {$p = factory.tokenRef((TerminalAST)$start);}
;

```

elementOptions

```

: ^(ELEMENT_OPTIONS elementOption*)
;

```

elementOption

```

: ID
| ^(ASSIGN ID
ID)
| ^(ASSIGN ID STRING_LITERAL)
| ^(ASSIGN ID ACTION)
| ^(ASSIGN ID INT)
;

```

Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/ATNBuilder.g

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Found in path(s):

\* /opt/cola/permits/1166873170\_1621514800.65/0/antlr4-4-6-sources-1-jar/org/antlr/v4/parse/GrammarTreeVisitor.java

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\*/

```
SwiftTypeInitMap ::= [
 "Int": "0",
 "Int64": "0",
 "Float": "0.0",
 "Double": "0.0",
 "Bool": "false",
 default: "nil" // anything other than a primitive type is an object
]
```

```
SwiftTypeMap ::= [
 "int": "Int",
 "float": "Float",
 "long": "Int64",
 "double": "Double",
 "bool": "Bool",
 "boolean": "Bool",
 default : key
]
```

```
// args must be <object-model-object>,
<fields-resulting-in-STs>
```

```
ParserFile(file, parser, namedActions, contextSuperClass) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<namedActions.header>
import Antlr4

<parser>
>>
```

```
ListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>
import Antlr4
```

```
/**
```

```
* This interface defines a complete listener for a parse tree produced by
```

```
* { @link <file.parserName> }.
```

```
*/
```

```

public protocol <file.grammarName>Listener: ParseTreeListener {
 <file.listenerNames: {lname |
/**
<if(file.listenerLabelRuleNames.(lname))>
* Enter a parse tree produced by the { @code <lname>\}
* labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.(lname)>\}.
<else>
* Enter a parse tree produced by { @link <file.parserName>#<lname>\}.
<endif>
- Parameters:
 - ctx: the parse tree
*/
func enter<lname;
 format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context)
/**
<if(file.listenerLabelRuleNames.(lname))>
* Exit a parse tree produced by the { @code <lname>\}
* labeled alternative in { @link <file.parserName>#<file.listenerLabelRuleNames.(lname)>\}.
<else>
* Exit a parse tree produced by { @link <file.parserName>#<lname>\}.
<endif>
- Parameters:
 - ctx: the parse tree
*/
func exit<lname; format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context); separator="\n">
}
>>

```

```

BaseListenerFile(file, header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>

```

```
import Antlr4
```

```

/**
* This class provides an empty implementation of { @link <file.grammarName>Listener},
* which can be extended to create a listener which only needs to handle a subset
* of the available methods.
*/
open class <file.grammarName>BaseListener: <file.grammarName>Listener {
 public init() { \}
 <file.listenerNames: {lname
|

```

```

/**
 * {@inheritDoc}
 *
 * \<p>The default implementation does nothing.\</p>
 */
open func enter<Iname; format="cap">(_ ctx: <file.parserName>.<Iname; format="cap">Context) { \}
/**
 * {@inheritDoc}
 *
 * \<p>The default implementation does nothing.\</p>
 */
open func exit<Iname; format="cap">(_ ctx: <file.parserName>.<Iname; format="cap">Context) { \} };
separator="\n">

```

```

/**
 * {@inheritDoc}
 *
 * \<p>The default implementation does nothing.\</p>
 */
open func enterEveryRule(_ ctx: ParserRuleContext) { \}
/**
 * {@inheritDoc}
 *
 * \<p>The default implementation does nothing.\</p>
 */
open func exitEveryRule(_ ctx: ParserRuleContext) { \}
/**
 * {@inheritDoc}
 *
 * \<p>The default implementation does nothing.\</p>
 */
open func visitTerminal(_ node: TerminalNode) { \}
/**
 * {@inheritDoc}
 *
 * \<p>The default implementation does nothing.\</p>
 */
open func visitErrorNode(_ node: ErrorNode) { \}
}
>>

```

```

VisitorFile(file, header, namedActions)
::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>

```

```

import Antlr4

/**
 * This interface defines a complete generic visitor for a parse tree produced
 * by { @link <file.parserName> }.
 *
 * @param \<T> The return type of the visit operation. Use { @link Void } for
 * operations with no return type.
 */
open class <file.grammarName>Visitor\<T>: ParseTreeVisitor\<T> {
 <file.visitorNames:{ lname |
/**
<if(file.visitorLabelRuleNames.(lname))>
 * Visit a parse tree produced by the { @code <lname> }
 * labeled alternative in { @link <file.parserName>#<file.visitorLabelRuleNames.(lname)> }.
<else>
 * Visit a parse tree produced by { @link <file.parserName>#<lname> }.
<endif>
- Parameters:
- ctx: the parse tree
- returns: the visitor result
 */
open func visit<lname; format="cap">(_ ctx: <file.parserName>.<lname; format="cap">Context) -> T{
 fatalError(#function + " must be overridden")
}
}; separator="\n">
}
>>

```

```

BaseVisitorFile(file,
 header, namedActions) ::= <<
<fileHeader(file.grammarFileName, file.ANTLRVersion)>
<if(file.genPackage)>
<!package <file.genPackage>;!>
<endif>
<header>
import Antlr4

/**
 * This class provides an empty implementation of { @link <file.grammarName>Visitor },
 * which can be extended to create a visitor which only needs to handle a subset
 * of the available methods.
 *
 * @param \<T> The return type of the visit operation. Use { @link Void } for
 * operations with no return type.
 */
open class <file.grammarName>BaseVisitor\<T>: AbstractParseTreeVisitor\<T> {
 <file.visitorNames:{ lname |

```

```

/**
 * {@inheritDoc}
 *
 * \<p>The default implementation returns the result of calling
 * {@link #visitChildren} on {@code ctx}.\</p>
 */
open func visit<Iname; format="cap">(_ ctx: <file.parserName>.<Iname; format="cap">Context) -> T? { return
visitChildren(ctx) \}}; separator="\n">
}
>>

fileHeader(grammarFileName, ANTLRVersion) ::= <<
// Generated from <grammarFileName; format="java-escape">
by ANTLR <ANTLRVersion>
>>

Parser(parser, funcs, atn, sempredFuncs, superClass) ::= <<
<Parser_(ctor="parser_ctor", ...)>
>>

Parser_(parser, funcs, atn, sempredFuncs, ctor, superClass) ::= <<
<!--@SuppressWarnings({"all", "warnings", "unchecked", "unused", "cast"})!>
open class <parser.name>: <superClass; null="Parser"> {

internal static var _decisionToDFA: [DFA] = {
 var decisionToDFA = [DFA]()
 let length = <parser.name>._ATN.getNumberOfDecisions()
 for i in 0..\<length {
 <!-- decisionToDFA[i] = DFA(<parser.name>._ATN.getDecisionState(i)!, i)!>
 decisionToDFA.append(DFA(<parser.name>._ATN.getDecisionState(i)!, i))
 }
 return decisionToDFA
}()
internal static let _sharedContextCache: PredictionContextCache = PredictionContextCache()
<if(parser.tokens)>
public enum Tokens: Int {
 case EOF = -1, <parser.tokens:{k | <k> = <parser.tokens.(k)>}; separator=", ", wrap, anchor>
}
<endif>
public
static let <parser.rules:{r | RULE_<r.name> = <r.index>}; separator=", ", wrap, anchor>
public static let ruleNames: [String] = [
 <parser.ruleNames:{r | "<r>"}; separator=", ", wrap, anchor>
]

<vocabulary(parser.literalNames, parser.symbolicNames)>

override

```

```

open func getGrammarFileName() -> String { return "<parser.grammarFileName; format="java-escape">" }

override
open func getRuleNames() -> [String] { return <parser.name>.ruleNames }

override
open func getSerializedATN() -> String { return <parser.name>._serializedATN }

override
open func getATN() -> ATN { return <parser.name>._ATN }

<namedActions.members>
<parser:(ctor)()>
<funcs; separator="\n">

<if(sempredFuncs)>
 override
 open func sempred(_ _localctx: RuleContext?, _ ruleIndex: Int, _ predIndex: Int)throws -> Bool {
 switch (ruleIndex) {
 <parser.sempredFuncs.values:{f|
case <f.ruleIndex>:
return try <f.name>_sempred(_localctx?.castdown(<f.ctxType>.self), predIndex)); separator="\n">

 default: return true
 }
 <!return true;!>
 }
 <sempredFuncs.values; separator="\n">
<endif>

<atn>
 public static let _serializedATN : String = <parser.name>ATN().jsonString
 public static let _ATN: ATN = ATNDeserializer().deserializeFromJson(_serializedATN)
}
>>

vocabulary(literalNames, symbolicNames) ::= <<
private static let _LITERAL_NAMES: [String?] = [
 <literalNames:{t | <t>}; null="nil", separator=", ", wrap, anchor>
]
private static let _SYMBOLIC_NAMES: [String?] = [
 <symbolicNames:{t | <t>}; null="nil", separator=", ", wrap, anchor>
]
public static let VOCABULARY: Vocabulary = Vocabulary(_LITERAL_NAMES, _SYMBOLIC_NAMES)

/**
 * @deprecated Use { @link #VOCABULARY } instead.
 */

```

```

//@Deprecated
public let tokenNames: [String?]? = {
 let length = _SYMBOLIC_NAMES.count
 var tokenNames = [String?](repeating: nil, count: length)
 for i in 0..

```

```

<!return true;!>
}
<sempredFuncs.values; separator="\n">
<endif>
>>

parser_ctor(p) ::= <<

open override
func getVocabulary() -> Vocabulary {
 return <p.name>.VOCABULARY
}

public override init(_ input:TokenStream)throws {
 RuntimeMetaData.checkVersion("4.6", RuntimeMetaData.VERSION)
 try super.init(input)
 _interp = ParserATNSimulator(self,<p.name>._ATN,<p.name>._decisionToDFA,
<parser.name>._sharedContextCache)
}
>>

/* This generates a private method since the actionIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleActionFunction(r, actions) ::= <<
private func <r.name>_action(_ _localctx: <r.ctxType>?, _ actionIndex: Int) {
 switch (actionIndex) {
 <actions:{index|
case <index>:
 <actions.(index)>
 }; separator="\n">
 default: break
 }
}
>>

/* This generates a private method since the predIndex is generated, making an
* overriding implementation impossible to maintain.
*/
RuleSempredFunction(r, actions) ::= <<
private func <r.name>_sempred(_ _localctx: <r.ctxType>!, _ predIndex: Int) throws -> Bool {
 switch (predIndex) {
 <actions:{index|
 case <index>:return <actions.(index)>; separator="\n">
 default: return true
 }
}
<!return true;!>
}

```



>>

RuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,namedActions,finallyAction,postamble,exceptions)

::= <<

<ruleCtx>

<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

@discardableResult

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>open func

<endif><currentRule.name>(<if(first(args))>\_ <endif><args; separator=", \_">) throws -> <currentRule.ctxType> {

var \_localctx: <currentRule.ctxType> = <currentRule.ctxType>(\_ctx, getState())<currentRule.args:{a | ,

<a.name>}>)

try enterRule(\_localctx, <currentRule.startState>, <parser.name>.RULE\_<currentRule.name>)

<namedActions.init>

<locals; separator="\n">

defer {

    <finallyAction>

    try! exitRule()

  }

do {

<if(currentRule.hasLookaheadBlock)>

  var \_alt:Int

<endif>

  <code>

  <postamble; separator="\n">

  <namedActions.after>

  }

<if(exceptions)>

<exceptions; separator="\n">

<else>

catch

  ANTLRException.recognition(let re) {

    \_localctx.exception = re

    \_errHandler.reportError(self, re)

    try \_errHandler.recover(self, re)

  }

<endif>

  return \_localctx

  }

>>

LeftRecursiveRuleFunction(currentRule,args,code,locals,ruleCtx,altLabelCtxs,

namedActions,finallyAction,postamble) ::=

<<

<ruleCtx>

<altLabelCtxs:{l | <altLabelCtxs.(l)>}; separator="\n">

```

<if(currentRule.modifiers)><currentRule.modifiers:{f | <f> }><else>public final <endif> func <currentRule.name>(
<if(first(args))>>_ <endif><args; separator=", _">) throws -> <currentRule.ctxType> {
return try <currentRule.name>(0<currentRule.args:{a | , <a.name>}>)
}
@discardableResult
private func <currentRule.name>(_ _p<args:{a | , <a>}>: Int) throws -> <currentRule.ctxType> {
let _parentctx: ParserRuleContext? = _ctx
var _parentState: Int = getState()
var _localctx: <currentRule.ctxType> = <currentRule.ctxType>(_ctx, _parentState<currentRule.args:{a | ,
<a.name>}>)
var _prevctx: <currentRule.ctxType>
= _localctx
var _startState: Int = <currentRule.startState>
try enterRecursionRule(_localctx, <currentRule.startState>, <parser.name>.RULE_<currentRule.name>, _p)
<namedActions.init>
<locals; separator="\n">
defer {
<finallyAction>
try! unrollRecursionContexts(_parentctx)
}
do {
<if(currentRule.hasLookaheadBlock)>
var _alt: Int
<endif>
<code>
<postamble; separator="\n">
<namedActions.after>
}
catch ANTLRException.recognition(let re) {
_localctx.exception = re
_errHandler.reportError(self, re)
try _errHandler.recover(self, re)
}

return _localctx;
}
>>

```

```

CodeBlockForOuterMostAlt(currentOuterMostAltCodeBlock, locals, preamble, ops) ::= <<
<if(currentOuterMostAltCodeBlock.altLabel)>_localctx = <currentOuterMostAltCodeBlock.altLabel;
format="cap">Context(_localctx);<endif>
try enterOuterAlt(_localctx, <currentOuterMostAltCodeBlock.alt.altNum>)
<CodeBlockForAlt(currentAltCodeBlock=currentOuterMostAltCodeBlock, ...)>
>>

```

```

CodeBlockForAlt(currentAltCodeBlock,
locals, preamble, ops) ::= <<
<!/{!>

```

```

<locals; separator="\n">
<preamble; separator="\n">
<ops; separator="\n">
<!/!>
>>

```

```

LL1AltBlock(choice, preamble, alts, error) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
<if(choice.label)><labelref(choice.label)> = try _input.LT(1)<endif>
<preamble; separator="\n">
switch (<parser.name>.Tokens(rawValue: try _input.LA(1))!) {
<choice.altLook,alts:{look,alt | <cases(ttypes=look)>
<alt>
break }; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlock(choice, alts, error) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
switch (<parser.name>.Tokens(rawValue: try _input.LA(1))!) {
<choice.altLook,alts:{look,alt| <cases(ttypes=look)>
<alt>
break }; separator="\n">
default:
<error>
}
>>

```

```

LL1OptionalBlockSingleAlt(choice, expr, alts, preamble, error, followExpr) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
<preamble; separator="\n">
if (<expr>) {
<alts; separator="\n">
}
<!else
if (!(<followExpr>)) <error>!>
>>

```

```

LL1StarBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
<preamble; separator="\n">
while (<loopExpr>) {

```

```

<alts; separator="\n">
 setState(<choice.loopBackStateNumber>)
 try _errHandler.sync(self)
 <iteration>
}
>>

LL1PlusBlockSingleAlt(choice, loopExpr, alts, preamble, iteration) ::= <<
 setState(<choice.blockStartStateNumber>) <! alt block decision !>
 try _errHandler.sync(self)
 <preamble; separator="\n">
 repeat {
 <alts; separator="\n">
 setState(<choice.stateNumber>); <! loopback/exit decision !>
 try _errHandler.sync(self)
 <iteration>
 } while (<loopExpr>)
>>

// LL(*) stuff

AltBlock(choice, preamble, alts, error) ::= <<
 setState(<choice.stateNumber>)
 try _errHandler.sync(self)
 <if(choice.label)><labelref(choice.label)> = try _input.LT(1)<endif>
 <preamble; separator="\n">
 switch(try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)) {
 <alts:{alt |
 case
 <i>:
 <alt>
 break }; separator="\n">
 default: break
 }
>>

OptionalBlock(choice, alts, error) ::= <<
 setState(<choice.stateNumber>)
 try _errHandler.sync(self)
 switch(try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)) {
 <alts:{alt |
 case <i><if(!choice.ast.greedy)>+1<endif>:
 <alt>
 break }; separator="\n">
 default: break
 }
>>

```

```

StarBlock(choice, alts, sync, iteration) ::= <<
setState(<choice.stateNumber>)
try _errHandler.sync(self)
_alt = try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)
while (_alt != <choice.exitAlt> && _alt != ATN.INVALID_ALT_NUMBER) {
if (_alt==1<if(!choice.ast.greedy)>+1<endif>) {
<iteration>
<alts> <! should only be one !>
}
setState(<choice.loopBackStateNumber>)
try _errHandler.sync(self)
_alt = try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)
}
>>

```

```

PlusBlock(choice, alts, error) ::= <<
setState(<choice.blockStartStateNumber>); <! alt block decision !>
try _errHandler.sync(self)
_alt = 1<if(!choice.ast.greedy)>+1<endif>;
repeat
{
switch (_alt) {
<alts:{alt|
case <i><if(!choice.ast.greedy)>+1<endif>:
<alt>
break }; separator="\n">
default:
<error>
}
setState(<choice.loopBackStateNumber>); <! loopback/exit decision !>
try _errHandler.sync(self)
_alt = try getInterpreter().adaptivePredict(_input,<choice.decision>,_ctx)
} while (_alt != <choice.exitAlt> && _alt != ATN.INVALID_ALT_NUMBER)
>>

```

```

Sync(s) ::= "sync(<s.expecting.name>);"

```

```

ThrowNoViableAlt(t) ::= "throw try ANTLRException.recognition(e: NoViableAltException(self))"

```

```

TestSetInline(s) ::= <<
<!<s.bitsets:{ bits | <if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator=" || ">!>
//closure
{ () -> Bool in
<if(rest(s.bitsets))>var<else>let<endif> testSet: Bool = <first(s.bitsets):{ bits |
<if(rest(rest(bits.ttypes)))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s, bits)><endif> }>
<rest(s.bitsets):{ bits | testSet =

```

```

testSet || <if(rest(rest(bits.ttypes))><bitsetBitfieldComparison(s, bits)><else><bitsetInlineComparison(s,
bits)><endif>}; separator="\n">
 return testSet
}()
>>

// Java language spec 15.19 - shift operators mask operands rather than overflow to 0... need range test
testShiftInRange(shiftAmount) ::= <<
((<shiftAmount>) & ~0x3f) == 0
>>

// produces smaller bytecode only when bits.ttypes contains more than two items
bitsetBitfieldComparison(s, bits) ::= <<
<!(<testShiftInRange({<offsetShift(s.varName, bits.shift)>})> && ((1 \<< <offsetShift(s.varName, bits.shift)>) &
(<bits.ttypes:{ ttype | (1 \<< <offsetShift(ttype, bits.shift)>); separator=" | ">) != 0)!>
{ () -> Bool in
 <! let test: Bool = (<testShiftInRange({<offsetShift(s.varName, bits.shift)>})>)!>
 <!var temp: Int64 = Int64(<offsetShift(s.varName, bits.shift)>)!>
 <!temp = (temp \< 0) ? (64 + (temp % 64)) : (temp % 64)!>
 <!let test1: Int64 = (Int64(1) \<< temp)!>
 <!var test2: Int64 = (<first(bits.ttypes):{ ttype
| Utils.bitLeftShift(<offsetShift(parserName(ttype), bits.shift)>)}>)!>
 <!(<rest(bits.ttypes):{ ttype | test2 = test2 | Utils.bitLeftShift(<offsetShift(parserName(ttype), bits.shift)>)});
separator="\n">!>
 let testArray: [Int] = [<s.varName>, <bits.ttypes:{ ttype |<parserName(ttype)>}; separator=", ">]
 <!var test2: Int64 = Utils.testBitLeftShiftArray(testArray)!>
 return Utils.testBitLeftShiftArray(testArray, <bits.shift>)
}()
>>

isZero ::= [
"0": true,
default: false
]
parserName(ttype) ::= <%
<parser.name>.Tokens.<ttype>.rawValue
%>
offsetShift(shiftAmount, offset) ::= <%
<if(!isZero.(offset))><shiftAmount> - <offset><else><shiftAmount><endif>
%>

// produces more efficient bytecode when bits.ttypes contains at most two items
bitsetInlineComparison(s, bits) ::= <%
<bits.ttypes:{ ttype | <s.varName> == <parser.name>.Tokens.<ttype>.rawValue}; separator=" || ">
%>

cases(ttypes) ::= <<
<trunc(ttypes): { t | case .<t>:fallthrough } ; separator="\n">

```

```

<last(ttypes): { t
| case .<t>:} ; separator="\n">
>>

```

```

InvokeRule(r, argExprsChunks) ::= <<
setState(<r.stateNumber>)
<if(r.labels)>
try {
 let assignmentValue = try
<r.name>(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>,<endif><endif><argExprsChunks>)
 <r.labels:{1 | <labelref(l)> = assignmentValue } ; separator="\n">
 }()
<else>try
<r.name>(<if(r.ast.options.p)><r.ast.options.p><if(argExprsChunks)>,<endif><endif><argExprsChunks>)<endif>
>>

```

```

MatchToken(m) ::= <<
setState(<m.stateNumber>)
<if(m.labels)>
try {
 let assignmentValue = try match(<parser.name>.Tokens.<m.name>.rawValue)
 <m.labels:{1 | <labelref(l)> = assignmentValue } ; separator="\n">
 }()
<else>try match(<parser.name>.Tokens.<m.name>.rawValue)<endif>
>>

```

```

MatchSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, false)>"

```

```

MatchNotSet(m, expr, capture) ::= "<CommonSetStuff(m, expr, capture, true)>"

```

```

CommonSetStuff(m, expr, capture, invert) ::= <<
setState(<m.stateNumber>)
<if(m.labels)><m.labels:{1 | <labelref(l)>
= }>try _input.LT(1)<endif>
<capture>
if (<if(invert)><m.varName> \<= 0 || <else>!<endif>(<expr>)) {
 <if(m.labels)><m.labels:{1 | <labelref(l)> = }><endif>try _errHandler.recoverInline(self)<if(m.labels)> as
 Token<endif>
}
else {
 _errHandler.reportMatch(self)
 try consume()
}
>>

```

```

Wildcard(w) ::= <<
setState(<w.stateNumber>)
<if(w.labels)><w.labels:{1 | <labelref(l)> = }><endif>try matchWildcard();

```

```

>>

// ACTION STUFF

Action(a, foo, chunks) ::= "<chunks>"

ArgAction(a, chunks) ::= "<chunks>"

SemPred(p, chunks, failChunks) ::= <<
 setState(<p.stateNumber>)
 if (!(<chunks>)) {
 throw try ANTLRException.recognition(e:FailedPredicateException(self, <p.predicate><if(failChunks)>,
 <failChunks><elseif(p.msg)>, <p.msg><endif>))
 }
>>

ExceptionClause(e, catchArg, catchAction) ::= <<
 catch (<catchArg>) {
 <catchAction>
 }
>>

// lexer actions are not associated with model objects

LexerSkipCommand() ::= "skip()"
LexerMoreCommand() ::= "more()"
LexerPopModeCommand() ::= "popMode()"

LexerTypeCommand(arg)
 ::= "_type = <arg>"
LexerChannelCommand(arg) ::= "_channel = <arg>"
LexerModeCommand(arg) ::= "_mode = <arg>"
LexerPushModeCommand(arg) ::= "pushMode(<arg>)"

ActionText(t) ::= "<t.text>"
ActionTemplate(t) ::= "<t.st>"
ArgRef(a) ::= "_localctx.<a.name>"
LocalRef(a) ::= "_localctx.<a.name>"
RetValRef(a) ::= "_localctx.<a.name>"
QRetValRef(a) ::= "<ctx(a)>.<a.dict>.<a.name>"
/** How to translate $tokenLabel */
TokenRef(t) ::= "<ctx(t)>.<t.name>"
LabelRef(t) ::= "<ctx(t)>.<t.name>"
ListLabelRef(t) ::= "<ctx(t)>.<ListLabelName(t.name)>"
SetAttr(s,rhsChunks) ::= "<ctx(s)>.<s.name> = <rhsChunks>"

TokenLabelType() ::= "<file.TokenLabelType; null={Token}>"
InputSymbolType() ::= "<file.InputSymbolType; null={Token}>"

```



```

TokenPropertyRef_text(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getText()! : \"\""
TokenPropertyRef_type(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getType() : 0)"
TokenPropertyRef_line(t) ::= "<ctx(t)>.<t.label>
!= nil ? <ctx(t)>.<t.label>!.getLine() : 0)"
TokenPropertyRef_pos(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getCharPositionInLine() : 0)"
TokenPropertyRef_channel(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getChannel() : 0)"
TokenPropertyRef_index(t) ::= "<ctx(t)>.<t.label> != nil ? <ctx(t)>.<t.label>!.getTokenIndex() : 0)"
TokenPropertyRef_int(t) ::= "<ctx(t)>.<t.label> != nil ? Int(<ctx(t)>.<t.label>!.getText()!) : 0)"

RulePropertyRef_start(r) ::= "<ctx(r)>.<r.label> != nil ? (<ctx(r)>.<r.label>!.start?.description ?? \"\") : \"\""
RulePropertyRef_stop(r) ::= "<ctx(r)>.<r.label> != nil ? (<ctx(r)>.<r.label>!.stop?.description ?? \"\") : \"\""
RulePropertyRef_text(r) ::= "<ctx(r)>.<r.label> != nil ? try
_input.getText(<ctx(r)>.<r.label>!.start,<ctx(r)>.<r.label>!.stop) : \"\""
RulePropertyRef_ctx(r) ::= "<ctx(r)>.<r.label>"
RulePropertyRef_parser(r) ::= "self"

ThisRulePropertyRef_start(r) ::= "_localctx.start"
ThisRulePropertyRef_stop(r) ::=
"_localctx.stop"
ThisRulePropertyRef_text(r) ::= "(try _input.getText(_localctx.start, try _input.LT(-1)))"
ThisRulePropertyRef_ctx(r) ::= "_localctx"
ThisRulePropertyRef_parser(r) ::= "self"

NonLocalAttrRef(s) ::= "(<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>).<s.name>"
SetNonLocalAttr(s, rhsChunks) ::=
"(<s.ruleName; format=\"cap\">Context)getInvokingContext(<s.ruleIndex>).<s.name> = <rhsChunks>"

AddToLabelList(a) ::= "<ctx(a.label)>.<a.listName>.append(<labelref(a.label)>)"

TokenDecl(t) ::= "<t.name>: <SwiftTypeMap.(TokenLabelType())>!"
TokenTypeDecl(t) ::= "var <t.name>: Int = 0"
TokenListDecl(t) ::= "<t.name>: Array<Token> = Array<Token>()"
RuleContextDecl(r) ::= "<r.name>: <r.ctxName>!"
RuleContextListDecl(rdecl) ::= "<rdecl.name>: Array<<rdecl.ctxName>> = Array<<rdecl.ctxName>>()"

ContextTokenGetterDecl(t) ::=
"open func <t.name>() -> TerminalNode? { return getToken(<parser.name>.Tokens.<t.name>.rawValue, 0) }"
ContextTokenListGetterDecl(t)
::=
"open func <t.name>() -> Array<TerminalNode> { return getTokens(<parser.name>.Tokens.<t.name>.rawValue)
}"
ContextTokenListIndexedGetterDecl(t) ::= <<
open func <t.name>(_ i:Int) -> TerminalNode?{
return getToken(<parser.name>.Tokens.<t.name>.rawValue, i)
}
>>
ContextRuleGetterDecl(r) ::= <<

```

```

open func <r.name>() -> <r.ctxName>? {
 return getRuleContext(<r.ctxName>.self,0)
}
>>
ContextRuleListGetterDecl(r) ::= <<
open func <r.name>() -> Array<<<r.ctxName>>> {
 return getRuleContexts(<r.ctxName>.self)
}
>>
ContextRuleListIndexedGetterDecl(r) ::= <<
open func <r.name>(_ i: Int) -> <r.ctxName>? {
 return getRuleContext(<r.ctxName>.self,i)
}
>>

LexerRuleContext() ::= "RuleContext"

/** The rule context name is the rule followed by a suffix; e.g.,
 * r becomes rContext.
 */
RuleContextNameSuffix() ::= "Context"

ImplicitTokenLabel(tokenName) ::= "_<tokenName>"
ImplicitRuleLabel(ruleName) ::= "_<ruleName>"
ImplicitSetLabel(id) ::= "_tset<id>"
ListLabelName(label)
 ::= "<label>"

CaptureNextToken(d) ::= "<d.varName> = try _input.LT(1)"
CaptureNextTokenType(d) ::= "<d.varName> = try _input.LA(1)"

StructDecl(struct,ctorAttrs,attrs,getters,dispatchMethods,interfaces,extensionMembers,
 superClass={ParserRuleContext}) ::= <<
open class
<struct.name>:<if(contextSuperClass)><contextSuperClass><else>ParserRuleContext<endif><if(interfaces)>,
<interfaces; separator=", "><endif> {
 <attrs:{a | public var <a>}; separator="\n">
 <getters:{g | <g>}; separator="\n">
 <! <if(ctorAttrs)>public init(_ parent: ParserRuleContext,_ invokingState: Int) { super.init(parent, invokingState)
 }<endif> !>
 <if(ctorAttrs)>
 public convenience init(_ parent: ParserRuleContext?, _ invokingState: Int<ctorAttrs:{a | , _ <a>}>) {
 self.init(parent, invokingState)
 <struct.ctorAttrs:{a | self.<a.name> = <a.name>;}; separator="\n">
 }
 <endif>
 open override func getRuleIndex() -> Int { return <parser.name>.RULE_<struct.derivedFromName> }
 <if(struct.provideCopyFrom)>

```

```

<! don't need copy unless we have subclasses !>
<!public init() { }!>
public func copyFrom(_ ctx: <struct.name>) {
 super.copyFrom(ctx)
 <struct.attrs:{a | self.<a.name> = ctx.<a.name>;}; separator="\n">
}
<endif>
<dispatchMethods; separator="\n">
<extensionMembers; separator="\n">
}
>>

```

```

AltLabelStructDecl(struct,attrs, getters,dispatchMethods) ::= <<
public final class <struct.name>: <currentRule.name; format="cap">Context {
 <attrs:{a | public var <a>;}; separator="\n">
 <getters:{g | <g>;}; separator="\n">
 public init(_ ctx: <currentRule.name; format="cap">Context) {
 super.init()
 copyFrom(ctx)
 }
 <dispatchMethods; separator="\n">
}
>>

```

```

ListenerDispatchMethod(method) ::= <<
override
open func <if(method.isEnter)>enter<else>exit<endif>Rule(_ listener: ParseTreeListener) {
 if listener is <parser.grammarName>Listener {
 (listener as!
 <parser.grammarName>Listener).<if(method.isEnter)>enter<else>exit<endif><struct.derivedFromName;
 format="cap">(self)
 }
}
>>

```

```

VisitorDispatchMethod(method)
::= <<
override
open func accept<T>(_ visitor: ParseTreeVisitor<T>) -> T? {
 if visitor is <parser.grammarName>Visitor {
 return (visitor as! <parser.grammarName>Visitor<T>).visit<struct.derivedFromName; format="cap">(self)
 }else if visitor is <parser.grammarName>BaseVisitor {
 return (visitor as! <parser.grammarName>BaseVisitor<T>).visit<struct.derivedFromName; format="cap">(self)
 }
 else {
 return visitor.visitChildren(self)
 }
}
}

```

>>

```
AttributeDecl(d) ::= "<d.name>: <SwiftTypeMap.(d.type)><if(d.initValue)> = <d.initValue><else>!<endif>"
```

```
/** If we don't know location of label def x, use this template (_localctx as! <x.ctx.name> */
```

```
labelref(x) ::= "<if(!x.isLocal)>_localctx.castdown(<x.ctx.name>.self).<endif><x.name>"
```

```
/** For any action chunk, what is correctly-typed context struct ptr? */
```

```
ctx(actionChunk) ::= "_localctx.castdown(<actionChunk.ctx.name>.self)"
```

```
// used for left-recursive rules
```

```
recRuleAltPredicate(ruleName,opPrec)
```

```
 ::= "precpred(_ctx, <opPrec>)"
```

```
recRuleSetReturnAction(src,name) ::= "$<name>=$<src>.<name>"
```

```
recRuleSetStopToken() ::= "_ctx!.stop = try _input.LT(-1)"
```

```
recRuleAltStartAction(ruleName, ctxName, label, isListLabel) ::= <<
```

```
_localctx = <ctxName>Context(_parentctx, _parentState);
```

```
<if(label)>
```

```
<if(isListLabel)>
```

```
_localctx.<label>.append(_prevctx)
```

```
<else>
```

```
_localctx.<label> = _prevctx
```

```
<endif>
```

```
<endif>
```

```
<if(label)>_localctx.<label> = _prevctx;<endif>
```

```
try pushNewRecursionContext(_localctx, _startState, <parser.name>.RULE_<ruleName>)
```

```
>>
```

```
recRuleLabeledAltStartAction(ruleName, currentAltLabel, label, isListLabel) ::= <<
```

```
_localctx = <currentAltLabel; format="cap">Context(<ruleName; format="cap">Context(_parentctx,
_parentState))
```

```
<if(label)>
```

```
<if(isListLabel)>
```

```
(_localctx as! <currentAltLabel; format="cap">Context).<label>.append(_prevctx)
```

```
<else>
```

```
(_localctx as! <currentAltLabel; format="cap">Context).<label> = _prevctx
```

```
<endif>
```

```
<endif>
```

```
try pushNewRecursionContext(_localctx, _startState,
```

```
<parser.name>.RULE_<ruleName>)
```

```
>>
```

```
recRuleReplaceContext(ctxName) ::= <<
```

```
_localctx = <ctxName>Context(_localctx)
```

```
_ctx = _localctx
```

```
_prevctx = _localctx
```

```
>>
```

```

recRuleSetPrevCtx() ::= <<
if _parseListeners != nil {
 try triggerExitRuleEvent()
}
_prevctx = _localctx
>>

```

```

LexerFile(lexerFile, lexer, namedActions) ::= <<
<fileHeader(lexerFile.grammarFileName, lexerFile.ANTLRVersion)>
<if(lexerFile.genPackage)>
<!package <lexerFile.genPackage>;!>
<endif>
<namedActions.header>
import Antlr4

```

```

<lexer>
>>

```

```

Lexer(lexer, atn, actionFuncs, sempredFuncs, superClass) ::= <<
open class <lexer.name>: <superClass; null="Lexer"> {
 internal static var _decisionToDFA: [DFA] = {
 var decisionToDFA = [DFA]()
 let length = <lexer.name>._ATN.getNumberOfDecisions()
 for i in 0..<length {
 <! decisionToDFA[i] = DFA(<lexer.name>._ATN.getDecisionState(i)!, i);!>
 decisionToDFA.append(DFA(<lexer.name>._ATN.getDecisionState(i)!, i))
 }
 }

```

```

 return decisionToDFA
}()

```

```

 internal static let _sharedContextCache: PredictionContextCache = PredictionContextCache()
 public static let <lexer.tokens>: {k | <k>=<lexer.tokens.(k)>}; separator=" ", wrap, anchor>
 <if(lexer.channels)>
 public let <lexer.channels>: {k | <k>=<lexer.channels.(k)>}; separator=" ", wrap, anchor>
 <endif>
 <rest(lexer.modes): {m | public static let <m>: Int = <i>;}; separator="\n">
 public static let modeNames: [String] = [
 <lexer.modes: {m | "<m>"}; separator=" ", wrap, anchor>
]

```

```

 public static let ruleNames: [String] = [
 <lexer.ruleNames: {r | "<r>"}; separator=" ", wrap, anchor>
]

```

```

 <vocabulary(lexer.literalNames, lexer.symbolicNames)>

```

```

<namedActions.members>
 open override func getVocabulary() -> Vocabulary {
 return <lexer.name>.VOCABULARY
 }

public override init(_ input: CharStream) {
 RuntimeMetaData.checkVersion("<lexerFile.ANTLRVersion>", RuntimeMetaData.VERSION)
 super.init(input)
 _interp = LexerATNSimulator(self, <lexer.name>._ATN,
 <lexer.name>._decisionToDFA, <lexer.name>._sharedContextCache)
}

override
open func getGrammarFileName() -> String { return "<lexer.grammarFileName>" }

 override
open func getRuleNames() -> [String] { return <lexer.name>.ruleNames }

override
open func getSerializedATN() -> String { return <lexer.name>._serializedATN }

override
open func getModeNames() -> [String] { return <lexer.name>.modeNames }

override
open func getATN() -> ATN { return <lexer.name>._ATN }

<dumpActions(lexer, "", actionFuncs, sempredFuncs)>
<atn>
 public static let _serializedATN: String = <lexer.name>ATN().jsonString
 public static let _ATN: ATN = ATNDeserializer().deserializeFromJson(_serializedATN)
}
>>

/** Don't need to define anything. The tool generates a XParserATN.swift file (and same for lexer)
 * which is referenced from static field _serializedATN. This json string is passed to
 * deserializeFromJson(). Note this is not the "serialization as array of ints" that
 other targets
 * do. It is more or less the output of ATNPrinter which gets read back in.
 */
SerializedATN(model) ::= <<
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<SwiftTypeInitMap.(typeName)>

```

>>

```
codeFileExtension() ::= ".swift"
```

Found in path(s):

```
* /opt/cola/permits/1166873170_1621514800.65/0/antlr4-4-6-sources-1-
jar/org/antlr/v4/tool/templates/codegen/Swift/Swift.stg
```

## 1.152 glib 2.56.1-9.el7\_9

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Version 2.1, February 1999

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# 1.154 commons-lang3 3.12.0

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Jan 21, 2002

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@ignore

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@c man begin SEEALSO

gfdl(7), fsf-funding(7).

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Any

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Source code for a work means

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the exclusion of warranty; and each file should have at least the  
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```
<one line to give the program's name and a brief idea of what it does.>
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```

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```
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under certain conditions; type `show c' for details.
```

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```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
program `Gnomovision' (a program to direct compilers to make passes
at assemblers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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@iftex

@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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@heading END OF TERMS AND CONDITIONS

@end iftex

@ifinfo

@center END OF TERMS AND CONDITIONS

@end ifinfo

@page

@appendixsubsec How to Apply These Terms to Your New Libraries



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```
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@var{one line to give the library's name and an idea of what it does.}
Copyright (C) @var{year} @var{name of author}
```

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Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301,
USA.
@end smallexample
```

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```
@smallexample
Yoyodyne, Inc., hereby disclaims all copyright interest in the library
`Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
@var{signature of Ty Coon}, 1 April 1990
Ty Coon, President of Vice
@end smallexample
```

That's all there is to it!

@ignore  
@c Set file name and title for man page.  
@setfilename gfdl  
@settitle GNU Free Documentation License  
@c man begin SEEALSO  
gpl(7), fsf-funding(7).  
@c man end  
@c man begin COPYRIGHT  
Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.  
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@c This file is intended to be included within another document,  
@c hence no sectioning command or @node.  
@c man end  
@end ignore

@c Special handling for inclusion in the install manual.

@ifset gfdlhtml

@ifnohtml

@comment node-name, next, previous, up

@node GNU Free Documentation License, Concept Index, Old, Top

@end ifnohtml

@html

<h1 align="center">Installing GCC: GNU Free Documentation License</h1>

@end html

@ifnohtml

@unnumbered GNU Free Documentation License

@end ifnohtml

@end ifset

@c man begin DESCRIPTION

@ifclear gfdlhtml

@node GNU Free Documentation License

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@end ifclear

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```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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This is the Debian GNU/Linux prepackaged version of the GNU compiler collection, containing Ada, C, C++, Fortran 95, Java, Objective-C, Objective-C++, and Treelang compilers, documentation, and support libraries. In addition, Debian provides the gdc compiler, either in the same source package, or built from a separate same source package. Packaging is done by the Debian GCC Maintainers <debian-gcc@lists.debian.org>, with sources obtained from:

<ftp://gcc.gnu.org/pub/gcc/releases/> (for full releases)  
<svn://gcc.gnu.org/svn/gcc/> (for prereleases)  
<http://bitbucket.org/goshawk/gdc> (for D)

The current gcc-4.8 source package is taken from the SVN gcc-4\_8-branch.

Changes: See [changelog.Debian.gz](http://changelog.Debian.gz)

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

Language	Compiler package	Library package	Documentation
Ada	gnat-4.8		
	libgnat-4.8	gnat-4.8-doc	
C	gcc-4.8		gcc-4.8-doc
C++	g++-4.8	libstdc++6	libstdc++6-4.8-doc
D	gdc-4.8		
Fortran 95	gfortran-4.8	libgfortran3	gfortran-4.8-doc
Go	gccgo-4.8	libgo0	
Java	gcj-4.8	libgcj10	libgcj-doc
Objective C	gobjc-4.8	libobjc2	
Objective C++	gobjc++-4.8		

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

Language	Sources	Development	Debugging	Position-Independent
C++		libstdc++6-4.8-dev	libstdc++6-4.8-dbg	libstdc++6-4.8-pic
D	libphobos-4.8-dev			
Java	libgcj10-src	libgcj10-dev	libgcj10-dbg	

Additional packages include:

All languages:

libgcc1, libgcc2, libgcc4

GCC intrinsics (platform-dependent)

gcc-4.8-base	Base files common to all compilers
gcc-4.8-soft-float	Software floating point (ARM only)
gcc-4.8-source	The sources with patches

Ada:

libgnatvsn-dev, libgnatvsn4.8 GNAT version library  
libgnatprj-dev, libgnatprj4.8 GNAT Project Manager library

C:

cpp-4.8, cpp-4.8-doc	GNU C Preprocessor
libmudflap0-dev, libmudflap0	Library for instrumenting pointers
libssp0-dev, libssp0	GCC stack smashing protection library
libquadmath0	Math routines for the __float128 type
fixincludes	Fix non-ANSI header files
protoize	Create/remove ANSI prototypes from C code

Java:  
gij                   The Java bytecode interpreter and VM  
libgcj-common        Common files for the Java run-time  
libgcj10-awt         The Abstract Windowing Toolkit  
libgcj10-jar         Java ARchive  
for the Java run-time

C, C++ and Fortran 95:

libgomp1-dev, libgomp1   GCC OpenMP (GOMP) support library  
libitm1-dev, libitm1    GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++6. Similarly, on some 32-bit platforms which can also run 64-bit code, Debian provides additional packages with names beginning with 'lib64' instead of 'lib'. These packages contain 64-bit versions of the libraries. (At this time, not all platforms and not all libraries support biarch.) The license terms for these lib32 or lib64 packages are identical to the ones for the lib packages.

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- libatomic
- libdecnumber
- libgomp
- libitm
- libssp
- libstdc++-v3
- libobjc
- libmudflap
- libgfortran
- The libgnat-4.8 Ada support library and libgnatvsn library.
- Various config files in gcc/config/ used in runtime libraries.

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libquadmath/math:

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coshq.c, erfq.c, jnq.c, lgammaq.c, powq.c, roundq.c:

Changes for 128-bit \_\_float128 are

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ldexpq.c:

- \* Conversion to long double by Ulrich Drepper,
- \* Cygnus Support, drepper@cygnus.com.

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gcc/go/gofrontend, libgo:

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D:

gdc-4.8                    GNU D Compiler  
libphobos-4.8-dev        D standard runtime library

The D source package is made up of the following components.

The D front-end for GCC:

- d/\*

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- d/dmd/\*

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The Zlib data compression library:

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The Phobos standard runtime library:

- d/phobos/\*

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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

## HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

Thomas Funke (thf@zelator.in-berlin.de(?)) and

Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.

Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.

Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader

specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and

Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports.

Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk).

Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task).

Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.

David Chase, then at Olivetti Research, suggested several improvements.

Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC.

Jesse Hull and John Ellis supplied the C++ interface code.

Zhong Shao performed much of the

experimentation that led to the

current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.)

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1998-05-11

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The "Minimal Corresponding Source" for a Combined Work means the

Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

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You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

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If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

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#### 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

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  - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
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Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

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You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

#### 6. Revised Versions of the GNU Lesser General Public License.

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If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

# 1.156 libcurl 7.29.0-59.el7\_9.1

## 1.156.1 Available under license :

License Mixing with apps, libcurl and Third Party Libraries

=====

libcurl can be built to use a fair amount of various third party libraries, libraries that are written and provided by other parties that are distributed using their own licenses. Even libcurl itself contains code that may cause problems to some. This document attempts to describe what licenses libcurl and the other libraries use and what possible dilemmas linking and mixing them all can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that GPL[1]-licensed code is not allowed to be linked with code licensed under the Original BSD license (with the announcement clause). You may still build your own copies that use them all, but distributing them as binaries would be to violate the GPL license - unless you accompany your license with an exception[2]. This particular problem was addressed when the Modified BSD license was created, which does not have the announcement clause that collides with GPL.

libcurl <http://curl.haxx.se/docs/copyright.html>

Uses an MIT (or Modified BSD)-style license that is as liberal as possible. Some of the source files that deal with KRB4 have Original BSD-style announce-clause licenses. You may not distribute binaries with krb4-enabled libcurl that also link with GPL-licensed code!

OpenSSL <http://www.openssl.org/source/license.html>

(May be used for SSL/TLS support) Uses an Original BSD-style license with an announcement clause that makes it "incompatible" with GPL. You are not allowed to ship binaries that link with OpenSSL that includes GPL code (unless that specific GPL code includes an exception for OpenSSL - a habit that is growing more and more common). If OpenSSL's licensing is a problem for you, consider using GnuTLS or yassl instead.

GnuTLS <http://www.gnutls.org/>

(May be used for SSL/TLS support) Uses the LGPL[3] license. If this is a problem for you, consider using OpenSSL instead. Also note that GnuTLS itself depends on and uses other libs (libcrypt and libpgg-error) and they too are LGPL- or GPL-licensed.

yassl <http://www.yassl.com/>

(May be used for SSL/TLS support) Uses the GPL[1] license. If this is a problem for you, consider using OpenSSL or GnuTLS instead.

NSS <http://www.mozilla.org/projects/security/pki/nss/>

(May be used for SSL/TLS support) Is covered by the MPL[4] license, the GPL[1] license and the LGPL[3] license. You may choose to license the code under MPL terms, GPL terms, or LGPL terms. These licenses grant you different permissions and impose different obligations. You should select the license that best meets your needs.

axTLS <http://axtls.sourceforge.net/>

(May be used for SSL/TLS support) Uses a Modified BSD-style license.

c-ares <http://daniel.haxx.se/projects/c-ares/license.html>

(Used for asynchronous name resolves) Uses an MIT license that is very liberal and imposes no restrictions on any other library or part you may link with.

zlib [http://www.gzip.org/zlib/zlib\\_license.html](http://www.gzip.org/zlib/zlib_license.html)

(Used for compressed Transfer-Encoding support) Uses an MIT-style license that shouldn't collide with any other library.

krb4

While nothing in particular says that a Kerberos4 library must use any particular license, the one I've tried and used successfully so far (kth-krb4) is partly Original BSD-licensed with the announcement clause. Some of the code in libcurl that is written to deal with Kerberos4 is Modified BSD-licensed.

MIT Kerberos <http://web.mit.edu/kerberos/www/dist/>

(May be used for GSS support) MIT licensed, that shouldn't collide with any other parts.

Heimdal <http://www.pdc.kth.se/heimdal/>

(May be used for GSS support) Heimdal is Original BSD licensed with the announcement clause.

GNU GSS <http://www.gnu.org/software/gss/>

(May be used for GSS support) GNU GSS is GPL licensed. Note that you may not distribute binary curl packages that uses this if you build curl to also link and use any Original BSD licensed libraries!

fbopenssl

(Used for SPNEGO support) Unclear license. Based on its name, I assume that it uses the OpenSSL license and thus shares the same issues as described for OpenSSL above.

libidn <http://josefsson.org/libidn/>

(Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL is a variation of GPL with slightly less aggressive "copyleft". This license requires more requirements to be met when distributing binaries, see the license for details. Also note that if you distribute a binary that includes this library, you must also include the

full LGPL license text. Please properly point out what parts of the distributed package that the license addresses.

OpenLDAP <http://www.openldap.org/software/release/license.html>

(Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses OpenLDAP as a shared library only, I have not heard of anyone that ships OpenLDAP linked with libcurl in an app.

libssh2 <http://www.libssh2.org/>

(Used for scp and sftp support) libssh2 uses a Modified BSD-style license.

[1] = GPL - GNU General Public License: <http://www.gnu.org/licenses/gpl.html>

[2] = <http://www.fsf.org/licenses/gpl-faq.html#GPLIncompatibleLibs> details on how to write such an exception to the GPL

[3] = LGPL - GNU Lesser General Public License:

<http://www.gnu.org/licenses/lgpl.html>

[4] = MPL - Mozilla Public License:

<http://www.mozilla.org/MPL/>

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## 1.157 libstdc++ 4.8.5-44.el7

### 1.157.1 Available under license :

Jan 21, 2002

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Version 2.1, February 1999

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[This is the first released version of the Lesser GPL. It also counts  
as the successor of the GNU Library Public License, version 2, hence  
the version number 2.1.]

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with the library after making changes to the library and recompiling  
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We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

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Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this

case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated



interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

- a) The modified work must itself be a software library.
- b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
- c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

### 3. You may opt to apply the terms of the ordinary GNU General Public

License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse

engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is

normally

distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

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Section 6 states terms for distribution of such executables.

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any

executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the

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- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
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For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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Version 2.1, February 1999

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5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

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To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

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```

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```

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If the program is interactive, make it output a short notice like this  
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19xx name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the  
appropriate parts of the General Public License. Of course, the  
commands you use may be called something other than `show w' and `show  
c'; they could even be mouse-clicks  
or menu items--whatever suits your  
program.

You should also get your employer (if you work as a programmer) or your  
school, if any, to sign a "copyright disclaimer" for the program, if  
necessary. Here a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
program `Gnomovision' (a program to direct compilers to make passes
at assemblers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

That's all there is to it!  
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@center Version 2.1, February 1999

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@end iftex

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(For example, a function in a library to compute square roots has  
a purpose that is entirely well-defined independent of the  
application. Therefore, Subsection 2d requires that any  
application-supplied function or table used by this function must  
be optional: if the application does not supply it, the square  
root function must still  
compute square roots.)

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@item

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@item

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Section 6 states terms for distribution of such executables.

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work.

(Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

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@enumerate a

@item

Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified

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@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

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@page

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@end smallexample

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school, if any, to sign a ``copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
@smallexample
```

```
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`Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
@var{signature of Ty Coon}, 1 April 1990
```

```
Ty Coon, President of Vice
```

```
@end smallexample
```

That's all there is to it!

```
@ignore
```

```
@c Set file name and title for man page.
```

```
@setfilename gfdl
```

```
@settitle GNU Free Documentation License
```

```
@c man begin SEEALSO
```

```
gpl(7), fsf-funding(7).
```

```
@c man end
```

```
@c man begin COPYRIGHT
```

```
Copyright @copyright{ } 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc.
```

```
@uref{http://fsf.org/}
```

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```
@c This file is intended to be included within another document,
```

```
@c hence no sectioning command or @node.
```

```
@c man end
```

```
@end ignore
```

```
@c Special handling for inclusion in the install manual.
```

```
@ifset gfdlhtml
```

```
@ifnohtml
```

```
@comment node-name, next, previous, up
```

```
@node GNU Free Documentation License, Concept Index, Old, Top
```

```
@end ifnohtml
```

```
@html
```

```
<h1 align="center">Installing GCC: GNU Free Documentation License</h1>
```

```
@end html
```

```
@ifnohtml
```

```
@unnumbered GNU Free Documentation License
```

```
@end ifnohtml
```

```
@end ifset
```

```
@c man begin DESCRIPTION
```

```
@ifclear gfdlhtml
```

```
@node GNU Free Documentation License
```

```
@unnumbered
```

```
GNU Free Documentation License
```

```
@end ifclear
```

@cindex FDL, GNU Free Documentation License

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@c End:
```

@c man end

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ftp://gcc.gnu.org/pub/gcc/releases/ (for full releases)  
 svn://gcc.gnu.org/svn/gcc/ (for prereleases)  
 http://bitbucket.org/goshawk/gdc (for D)

The current gcc-4.8 source package is taken from the SVN gcc-4\_8-branch.

Changes: See changelog.Debian.gz

Debian splits the GNU Compiler Collection into packages for each language, library, and documentation as follows:

Language	Compiler package	Library package	Documentation
Ada	gnat-4.8		
	libgnat-4.8	gnat-4.8-doc	
C	gcc-4.8		gcc-4.8-doc
C++	g++-4.8	libstdc++6	libstdc++6-4.8-doc
D	gdc-4.8		
Fortran 95	gfortran-4.8	libgfortran3	gfortran-4.8-doc
Go	gccgo-4.8	libgo0	
Java	gcj-4.8	libgcj10	libgcj-doc
Objective C	gobjc-4.8	libobjc2	
Objective C++	gobjc++-4.8		

For some language run-time libraries, Debian provides source files, development files, debugging symbols and libraries containing position-independent code in separate packages:

Language	Sources	Development	Debugging	Position-Independent
C++		libstdc++6-4.8-dbg	libstdc++6-4.8-pic	
D	libphobos-4.8-dev			
Java	libgcj10-src	libgcj10-dev	libgcj10-dbg	

Additional packages include:

All languages:

libgcc1, libgcc2, libgcc4

GCC intrinsics (platform-dependent)

gcc-4.8-base Base files common to all compilers

gcc-4.8-soft-float        Software floating point (ARM only)  
gcc-4.8-source         The sources with patches

Ada:

libgnatvsn-dev, libgnatvsn4.8 GNAT version library  
libgnatprj-dev, libgnatprj4.8 GNAT Project Manager library

C:

cpp-4.8, cpp-4.8-doc     GNU C Preprocessor  
libmudflap0-dev, libmudflap0 Library for instrumenting pointers  
libssp0-dev, libssp0     GCC stack smashing protection library  
libquadmath0            Math routines for the \_\_float128 type  
fixincludes             Fix non-ANSI header files  
protoize                 Create/remove ANSI prototypes from C code

Java:

gij                     The Java bytecode interpreter and VM  
libgcj-common            Common files for the Java run-time  
libgcj10-awt             The Abstract Windowing Toolkit  
libgcj10-jar             Java ARchive  
for the Java run-time

C, C++ and Fortran 95:

libgomp1-dev, libgomp1 GCC OpenMP (GOMP) support library  
libitm1-dev, libitm1 GNU Transactional Memory Library

Biarch support: On some 64-bit platforms which can also run 32-bit code, Debian provides additional packages containing 32-bit versions of some libraries. These packages have names beginning with 'lib32' instead of 'lib', for example lib32stdc++6. Similarly, on some 32-bit platforms which can also run 64-bit code, Debian provides additional packages with names beginning with 'lib64' instead of 'lib'. These packages contain 64-bit versions of the libraries. (At this time, not all platforms and not all libraries support biarch.) The license terms for these lib32 or lib64 packages are identical to the ones for the lib packages.

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- libatomic
- libdecnumber
- libgomp
- libitm
- libssp
- libstdc++-v3
- libobjc
- libmudflap
- libgfortran
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Version 3.1, 31 March 2009

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Written by Tobias Burnus <burnus@net-b.de>

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libquadmath/math:

atanq.c, expm1q.c, j0q.c, j1q.c, log1pq.c, logq.c:

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coshq.c, erfq.c, jnq.c, lgammaq.c, powq.c, roundq.c:

Changes for 128-bit \_\_float128 are

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ldexpq.c:

- \* Conversion to long double by Ulrich Drepper,
- \* Cygnus Support, drepper@cygnus.com.

cosq\_kernel.c, expq.c, sincos\_table.c, sincosq.c, sincosq\_kernel.c,  
sinq\_kernel.c, truncq.c:

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isinfq.c:

- \* Written by J.T. Conklin <jtc@netbsd.org>.
- \* Change for long double by Jakub Jelinek <jj@ultra.linux.cz>
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llroundq.c, lroundq.c, tgammaq.c:

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log10q.c:

Cephes Math Library Release 2.2: January, 1991

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Adapted for glibc November, 2001

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libjava/classpath/resource/gnu/java/locale/\*

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gcc/go/gofrontend, libgo:

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D:

gdc-4.8                    GNU D Compiler  
libphobos-4.8-dev        D standard runtime library

The D source package is made up of the following components.

The D front-end for GCC:

- d/\*

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Modified by Vincenzo Ampolo, Michael Parrot, Iain Buclaw, (C) 2009, 2010

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The DMD Compiler implementation of the D programming language:

- d/dmd/\*



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The Zlib data compression library:

- `d/phobos/etc/c/zlib/*`

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The Phobos standard runtime library:

- `d/phobos/*`

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This is an attempt to acknowledge early contributions to the garbage collector. Later contributions should instead be mentioned in README.changes.

#### HISTORY -

Early versions of this collector were developed as a part of research projects supported in part by the National Science Foundation and the Defense Advance Research Projects Agency.

The garbage collector originated as part of the run-time system for the Russell programming language implementation. The first version of the garbage collector was written primarily by Al Demers. It was then refined and mostly rewritten, primarily by Hans-J. Boehm, at Cornell U., the University of Washington, Rice University (where it was first used for C and assembly code), Xerox PARC, SGI, and HP Labs. However, significant contributions have also been made by many others.

Some other contributors:

More recent contributors are mentioned in the modification history in README.changes. My apologies for any omissions.

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by Kevin Kenny (kenny@m.cs.uiuc.edu). The adaptation to the IBM PC/RT is largely due to Vernon Lee, on machines made available to Rice by IBM.

Much of the HP specific code and a number of good suggestions for improving the generic code are due to Walter Underwood.

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code. Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port. Thomas Funke (thf@zelator.in-berlin.de(?)) and Brian D. Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports. Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code. Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes. Alistair G. Crooks(agg@uts.amdahl.com) supplied the NetBSD and 386BSD ports. Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port. Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk). Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task). Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port. David Chase, then at Olivetti Research, suggested several improvements. Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC. Jesse Hull and John Ellis supplied the C++ interface code. Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.) The software in this package is distributed under the GNU General Public License (with a special exception described below).

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```
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it
under certain conditions; type `show c' for details.
```

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```
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`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

---

```
#1: 32 7648 0x83
#2: 7680 8704 0xa5
#5: 7936 4864 0x7 (freebsd)
#6: 12544 3584 0x7 (freebsd)
```

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
--------	------	-------	-----	--------	----	--------

-----

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors  
Units = sectors of 1 \* 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux

-----

Create 2st primary partition  
1bebf87248e05d6e4e62b749da65d023  
bsd.img  
Set 2nd partition type  
2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors  
Units = sectors of 1 \* 512 = 512 bytes  
Sector size (logical/physical): 512 bytes / 512 bytes  
I/O size (minimum/optimal): 512 bytes / 512 bytes  
Disk label type: dos  
Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux
__ts_dev__2		4096	20479	8192	a5	FreeBSD

-----

Create default BSD  
2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

#	start	end	size	fstype	[fsize	bsize	cpg]
c:	4096	20479	16384	unused	0	0	
d:	0						



16064 16065 unused 0 0

BSD disklabel command (m for help):

Command (m for help):

-----

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

#	start	end	size	fstype	[fsize	bsize	cpg]
a:	4096	6144	2049	4.2BSD	0	0	0
c:	4096	20479	16384	unused	0	0	
d:	0	16064	16065	unused	0	0	

BSD disklabel command (m for help):

Command (m for help):

-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

0	unused	5	4.1BSD	9	4.4LFS	d	boot
1	swap						
	6	Eighth Edition	a	unknown	e	ADOS	
2	Version 6	7	4.2BSD	b	HPFS	f	HFS
3	Version 7	8	MS-DOS	c	ISO-9660	10	AdvFS
4	System V						

BSD disklabel command (m for help):

/\*

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- \*/

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size: 8388608, sector size: 512, PT: dos, offset: 446, id=0x8f8378c0

---

#1: 32 7648 0x83  
#2: 7680 8704 0xa5  
#5: 7936 4864 0x7 (freebsd)  
#6: 12544 3584 0x7 (freebsd)

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Initialize empty image

f1c9645dbc14efddc7d8a322685f26eb bsd.img

Create new DOS partition table

57e721e38d1266c2df055067c18f2cf9 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
--------	------	-------	-----	--------	----	--------

-----

Create 1st primary partition

ada64ace122978d00d1d1c0e5ee45d26 bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001



Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux

-----

Create 2st primary partition

1bebf87248e05d6e4e62b749da65d023

bsd.img

Set 2nd partition type

2d8e8dff51a88a045db233418dd73fbe bsd.img

---layout-----

\_\_ts\_dev\_\_: 10 MB, 10485760 bytes, 20480 sectors

Units = sectors of 1 \* 512 = 512 bytes

Sector size (logical/physical): 512 bytes / 512 bytes

I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk label type: dos

Disk identifier: 0x00000001

Device	Boot	Start	End	Blocks	Id	System
__ts_dev__1		2048	4095	1024	83	Linux
__ts_dev__2		4096	20479	8192	a5	FreeBSD

-----

Create default BSD

2e1cee529cb59c9341afef0443f196a1 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.

Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

#	start	end	size	fstype	[fsize	bsize	cpg]
c:	4096	20479	16384	unused	0	0	
d:	0						
	16064	16065	unused	0	0		

BSD disklabel command (m for help):

Command (m for help):

-----

b5c121c2091b2ff26b880551feac7112 bsd.img

---layout-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

4 partitions:

#	start	end	size	fstype	[fsize	bsize	cpg]
a:	4096	6144	2049	4.2BSD	0	0	0
c:	4096	20479	16384	unused	0	0	
d:	0	16064	16065	unused	0	0	

BSD disklabel command (m for help):

Command (m for help):

-----

Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.

Command (m for help):

BSD disklabel command (m for help):

0	unused	5	4.1BSD	9	4.4LFS	d	boot
1	swap						
	6	Eighth Edition	a	unknown	e	ADOS	
2	Version 6	7	4.2BSD	b	HPFS	f	HFS
3	Version 7	8	MS-DOS	c	ISO-9660	10	AdvFS
4	System V						

BSD disklabel command (m for help):

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## 1.161 jakarta xml bind api 2.3.3

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Written by:

Ulrich Drepper <drepper@redhat.com>

Jeff Johnson <jbj@redhat.com>

Alexander Larsson

Jakub Jelinek <jakub@redhat.com>

Roland McGrath <roland@redhat.com>

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Jeff Johnson <jbj@redhat.com>  
Alexander Larsson  
Jakub Jelinek <jakub@redhat.com>  
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```
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it
under certain conditions; type `show c' for details.
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```
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Ty Coon, President of Vice
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Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

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Version 2, June 1991

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[This is the first released version of the library GPL. It is numbered 2 because it goes with version 2 of the ordinary GPL.]

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Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

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For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

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Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot

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Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

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We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

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"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves,

then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and

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However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

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d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed

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Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because  
of this blurred distinction, using the ordinary General  
Public License for libraries did not effectively promote software  
sharing, because most developers did not use the libraries. We  
concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference  
between a  
"work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

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```
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<signature of Ty Coon>, 1 April 1990  
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```
<one line to give the program's name and a brief idea of what it does.>
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```

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```
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This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
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under certain conditions; type `show c' for details.
```

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@cindex LGPL, Lesser General Public License

@center Version 2.1, February 1999

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@appendixsubsec Preamble

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The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it

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The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

`@iftex`

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`@ifinfo`

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(For example, a function in a library to compute square roots has  
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root function must still  
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That's all there is to it!

(This file is under construction.) -\*- text -\*-

If you've contributed to gas and your name isn't listed here, it is not meant as a slight. I just don't know about it. Email me, nickc@redhat.com and I'll correct the situation.

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+++++

Dean Elsner wrote the original gas for vax. [more details?]

Jay Fenlason maintained gas for a while, adding support for gdb-specific debug information and the 68k series machines, most of the preprocessing pass, and extensive changes in messages.c, input-file.c, write.c.

K. Richard Pixley maintained gas for a while, adding various enhancements and many bug fixes, including merging support for several processors, breaking gas up to handle multiple object file format backends (including heavy rewrite, testing, an integration of the coff and b.out backends), adding configuration including heavy testing and verification of cross assemblers and file splits and renaming, converted gas to strictly ansi C including full prototypes, added support for m680[34]0 & cpu32, considerable work on i960 including a coff port (including considerable amounts of reverse engineering), a sparc opcode file rewrite, decstation, rs6000, and hp300hpux host ports, updated "know" assertions and made them work, much other

reorganization, cleanup, and lint.

Ken Raeburn wrote the high-level BFD interface code to replace most of the code in format-specific I/O modules.

The original Vax-VMS support was contributed by David L. Kashtan. Eric Youngdale and Pat Rankin have done much work with it since.

The Intel 80386 machine description was written by Eliot Dresselhaus.

Minh Tran-Le at IntelliCorp contributed some AIX 386 support.

The Motorola 88k machine description was contributed by Devon Bowen of Buffalo University and Torbjorn Granlund of the Swedish Institute of Computer Science.

Keith

Knowles at the Open Software Foundation wrote the original MIPS back end (tc-mips.c, tc-mips.h), and contributed Rose format support that hasn't been merged in yet. Ralph Campbell worked with the MIPS code to support a.out format.

Support for the Zilog Z8k and Hitachi H8/300, H8/500 and SH processors (tc-z8k, tc-h8300, tc-h8500, tc-sh), and IEEE 695 object file format (obj-ieee), was written by Steve Chamberlain of Cygnus Solutions. Steve also modified the COFF back end (obj-coffbfd) to use BFD for some low-level operations, for use with the Hitachi, 29k and Zilog targets.

John Gilmore built the AMD 29000 support, added .include support, and simplified the configuration of which versions accept which pseudo-ops. He updated the 68k machine description so that Motorola's opcodes always produced fixed-size instructions (e.g. jsr), while synthetic instructions remained shrinkable (jbsr). John fixed many bugs, including true tested cross-compilation support, and one bug in relaxation that took a week and required the proverbial one-bit fix.

Ian Lance Taylor of Cygnus Solutions merged the Motorola and MIT syntaxes for the 68k, completed support for some COFF targets (68k, i386 SVR3, and SCO Unix), wrote the ECOFF support based on Michael Meissner's mips-tfile program, wrote the PowerPC and RS/6000 support, and made a few other minor patches. He handled the binutils releases for versions 2.7 through 2.9.

David Edelsohn contributed fixes for the PowerPC and AIX support.

Steve Chamberlain made gas able to generate listings.

Support for the HP9000/300 was contributed by Glenn Engel of HP.

Support for ELF format files has been worked on by Mark Eichin of Cygnus Solutions (original, incomplete implementation), Pete Hoogenboom at the University of Utah (HPPA mainly), Michael Meissner of the Open Software Foundation (i386 mainly), and Ken Raeburn of Cygnus Solutions (sparc, initial 64-bit support).

Several engineers at Cygnus Solutions have also provided many small bug fixes and configuration enhancements.

The initial Alpha support was contributed by Carnegie-Mellon University. Additional work was done by Ken Raeburn of Cygnus Solutions. Richard Henderson then rewrote much of the Alpha support.

Ian Dall updated the support code for the National Semiconductor 32000 series, and added support for Mach 3 and NetBSD running on the PC532.

Klaus Kaempf ported the assembler and the binutils to openVMS/Alpha.

Steve Haworth contributed the support for the Texas Instruction c30 (tms320c30).

H.J. Lu has contributed many patches and much testing.

Alan Modra reworked much of the i386 backend, improving the error checking, updating the code, and improving the 16 bit support, using patches from the work of Martynas Kunigelis and H.J. Lu.

Many others have contributed large or small bugfixes and enhancements. If you've contributed significant work and are not mentioned on this list, and want to be, let us know. Some of the history has been lost; we aren't intentionally leaving anyone out.

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# 1.176 jackson 2.15.0

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# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007. It is currently developed by a community of developers.

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# 1.177 rpm 4.11.3-48.el7\_9

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## 1.178 libxml2 2.9.1-6.el7\_9.6

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## 1.182 unzip 6.0-24.el7\_9

### 1.182.1 Available under license :

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---

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---

**FIRST NOTE:**

This file contains some details about the copyright history of contributions to the UnZip project.

Additionally, it summarises some exceptions to the general BSD-like copyright found in LICENSE that covers our generic code and most of

the system specific ports.

Please read LICENSE first to find out what is allowed to do with Info-ZIP's UnZip code.

---

There are currently two explicit copyrights on portions of UnZip code (at least, of which Info-ZIP is aware):

Jim Luther's Mac OS File Manager interface code; and Christopher Evans' MacBinaryIII coding code (for the MacOS port).. These copyrights are discussed in more detail below.

All remaining

code is now (starting with UnZip version 5.41) covered by the new Info-ZIP license. For details, please read the accompanying file LICENSE. The terms and conditions in this license supersede the copyright conditions of the contributions by Igor Mandrichenko (vms/vms.c), Greg Roelofs (zipinfo.c, new version of unshrink.c), Mike White (Windows DLL code in "windll/\*"), Steve P. Miller (Pocket UnZip GUI "wince/\*"), and Mark Adler (inflate/explode decompression core routines, previously put into the public domain). All these Info-ZIP contributors (or "primary" authors) have permitted us to replace their copyright notes by the Info-ZIP License.

Frequently Asked Questions regarding (re)distribution of Zip and UnZip are near the end of this file.

There are no known patents on any of the code in UnZip. Unisys claims a patent on LZW encoding and on LZW decoding in an apparatus that performs LZW encoding, but the patent appears to exempt a stand-alone decoder (as in UnZip's unshrink.c). Unisys has publicly claimed otherwise, but the issue has never been tested in court. Since this point is unclear, unshrinking is not enabled by default. It is the responsibility of the user to make his or her peace with Unisys and its licensing requirements. (unshrink.c may be removed from future releases altogether.)

---

The original unzip source code has been extensively modified and almost entirely rewritten (changes include random zipfile access rather than sequential; replacement of unimplode() with explode(); replacement of old unshrink() with new (unrelated) unshrink(); replacement of output routines; addition of inflate(), wildcards, filename-mapping, text translation, ...; etc.). As far as we can tell, only the core code of the unreduce method remained substantially similar to Mr. Smith's original source. As of UnZip 5.42, the complete core code is now covered by the Info-ZIP Licence. Therefore, support



for the reduce method has been removed.

The drop of the reduce method should only affect some test archives,

reducing was never used in any publically distributed Zip program.

For pathologic cases where support for reduced archive entries is needed, the unreduce code copyrighted by Samuel H. Smith is available as a separate distribution (the restricted copyright of this code is cited below in the "historical" section).

The following copyright applies to the Mac OS File Manager interface code (macos/source/macstuff.[ch]), distributed with UnZip 5.4 and later:

- \* MoreFiles
- \*
- \* A collection of File Manager and related routines
- \*
- \* by Jim Luther (Apple Macintosh Developer Technical Support Emeritus)
- \* with significant code contributions by Nitin Ganatra
- \* (Apple Macintosh Developer Technical Support Emeritus)
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- \*
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- \* -----
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- \* homepage of Leonard Rosenthol leonardr@netcom.com)

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-----

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Regarding the first stipulation, Mr. Smith was tracked down in southern California some years back [Samuel H. Smith, The Tool Shop; as of mid-May 1994, (213) 851-9969 (voice), (213) 887-2127(?) (subscription BBS), 71150.2731@compuserve.com]:

"He says that he thought that whoever contacted him understood that he has no objection to the Info-ZIP group's inclusion of his code. His primary concern is that it remain freely distributable, he said."

Despite the fact that our "normal" code has been entirely rewritten and by default no longer contains any of Mr. Smith's code, Info-ZIP remains indebted and grateful to him. We hope he finds our contributions as useful as we have his.

Note that the third and fourth stipulations still apply to any company that wishes to incorporate the unreduce code into its products; if you wish to do so, you must contact Mr. Smith directly regarding licensing.

-----

The following copyright applied to most of the VMS code in vms.c, distributed with UnZip version 4.2 and later:

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-----

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-----

The remaining code was written by many people associated with the Info-ZIP group, with large contributions from (but not limited to): Greg Roelofs (overall program logic, ZipInfo, unshrink, filename mapping/portability, etc.), Mark Adler (inflate, explode, funzip), Kai Uwe Rommel (OS/2), John Bush and Paul Kienitz (Amiga), Antoine Verheijen (Macintosh), Hunter Goatley (more VMS), Mike White (Windows DLLs), Christian Spieler (overall logic, optimization, VMS, etc.) and others. See the file CONTRIBS in the source distribution for a much more complete list of contributors.

The decompression core code for the deflate method (inflate.[ch], explode.c) was originally written by Mark Adler who submitted it as public domain code.

-----

## 1.183 dom 1.0

### 1.183.1 Available under license :

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASObject.java

\*

/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/CharacterDataEditAS.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DOMImplementationAS.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DocumentAS.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASNamedObjectMap.java

\*

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DOMASWriter.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DocumentEditAS.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/ASObjectList.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DOMASBuilder.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/DOMASException.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom3/as/NodeEditAS.java

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* limitations under the License.
*/
/**
 * Checks if this content model has had its min/maxOccurs values reduced for
 * purposes of speeding up UPA. If
so, this content model should not be used
 * for any purpose other than checking unique particle attribution
 *
 * @return a boolean that says whether this content has been compacted for UPA
 */
```

Found in path(s):

```
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/models/XSCMValidator.java
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*/
/**
 * DOM Level 3 LS CR - Experimental.
 * Create a new LSParser. The newly constructed parser may
```

\*  
then be configured by means of its `DOMConfiguration`  
\* object, and used to parse documents by means of its `parse`  
\* method.  
\* @param mode The `mode` argument is either  
\* `MODE_SYNCHRONOUS` or `MODE_ASYNCHRONOUS`, if  
\* `mode` is `MODE_SYNCHRONOUS` then the  
\* `LSParser` that is created will operate in synchronous  
\* mode, if it's `MODE_ASYNCHRONOUS` then the  
\* `LSParser` that is created will operate in asynchronous  
\* mode.  
\* @param schemaType An absolute URI representing the type of the schema  
\* language used during the load of a `Document` using the  
\* newly created `LSParser`. Note that no lexical checking  
\* is done on the absolute URI. In order to create a  
\* `LSParser` for any kind of schema types (i.e. the  
\* `LSParser` will be free to use any schema  
found), use the value  
\* `null`.  
\* 

<b>Note:</b> For W3C XML Schema [
\* , applications must use the value  
\* `"http://www.w3.org/2001/XMLSchema"`. For XML DTD [
\* applications must use the value  
\* `"http://www.w3.org/TR/REC-xml"`. Other Schema languages  
\* are outside the scope of the W3C and therefore should recommend an  
\* absolute URI in order to use this method.  
\* @return The newly created `LSParser` object. This  
\* `LSParser` is either synchronous or asynchronous  
\* depending on the value of the `mode` argument.  
\* 

<b>Note:</b> By default, the newly created `LSParser`  
\* does not contain a `DOMErrorHandler`, i.e. the value of  
\* the "
error-handler</a>" configuration parameter is `null`. However, implementations  
\* may provide a default error handler at creation time. In that case,  
\* the initial value of the `"error-handler"` configuration  
\* parameter on the new created `LSParser` contains a  
\* reference to the default error handler.  
\* @exception DOMException  
\* NOT\_SUPPORTED\_ERR: Raised if the requested mode or schema type is  
\* not supported.  
\*/

Found in path(s):

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/dom/CoreDOMImplementationImpl.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/traversers/XSDocumentInfo.java  
\*  
/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/traversers/XSDElementTraverser.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/xni/parser/XMLErrorHandler.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/html/dom/HTMLFrameElementImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/util/XMLEntityDescriptionImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/util/ShadowedSymbolTable.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/util/ObjectListImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/wml/dom/WMLImgElementImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/wml/WMLOptgroupElement.java  
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/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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jar/org/apache/wml/WMLImgElement.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/dom/DeferredCDATASectionImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/traversers/XSDAbstractIDConstraintTraverser.java



\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/wml/dom/WMLTimerElementImpl.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/xs/XSParticle.java  
 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/jaxp/validation/XSGrammarPoolContainer.java  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
 jar/org/apache/xerces/impl/xs/opti/DefaultElement.java

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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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 jar/org/apache/xerces/impl/XMLDocumentScannerImpl.java  
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jar/org/apache/html/dom/HTMLPreElementImpl.java
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xs/XSTerm.java  
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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/html/dom/HTMLDOMImplementationImpl.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/models/XSCMUniOp.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/grammars/XMLGrammarLoader.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/validation/ConfigurableValidationState.java  
\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xml/serialize/IndentPrinter.java

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 \* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
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\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dv/dtd/XML11IDREFDatatypeValidator.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/xni/parser/XMLConfigurationException.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/util/AttributesProxy.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/jaxp/validation/ValidatorImpl.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/parsers/XMLGrammarParser.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/dtd/XMLSimpleType.java

\*

/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-jar/org/apache/xerces/impl/xs/SchemaNamespaceSupport.java

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- \* used to check the 3 constraints against each complex type
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jar/org/apache/xerces/impl/xs/models/XSDFACM.java

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jar/org/apache/xerces/impl/dv/xs/AbstractDateTimeDV.java

\*

/opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/dv/xs/YearDV.java

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jar/org/apache/xerces/impl/xs/traversers/XSDKeyrefTraverser.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/dv/xs/DateDV.java

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jar/org/apache/xerces/impl/dv/xs/DateTimeDV.java

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jar/org/apache/xerces/impl/xs/traversers/XSDUniqueOrKeyTraverser.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/dv/xs/MonthDV.java

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jar/org/apache/xerces/impl/dv/xs/MonthDayDV.java

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jar/org/apache/xerces/impl/dv/xs/TimeDV.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/xs/traversers/XSAttributeChecker.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-  
jar/org/apache/xerces/impl/dv/xs/YearMonthDV.java

\* /opt/cola/permits/1257218116\_1642790294.82/0/xercesimpl-2-12-0-sources-



```
jar/org/apache/xerces/impl/xs/XSModelGroupImpl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/xs/XSSimpleTypeDecl.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/traversers/XSDHandler.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/dv/xs/DayDV.java
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xs/XMLSchemaValidator.java
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* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/message.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/DOMMessages.properties
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jar/org/apache/xerces/impl/msg/XPointerMessages.properties
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jar/org/apache/xerces/impl/msg/DatatypeMessages.properties
*
/opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/message_fr.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/SAXMessages.properties
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jar/org/apache/xerces/impl/msg/XIncludeMessages.properties
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jar/org/apache/xerces/impl/msg/XMLMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/XMLSerializerMessages.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/xpath/regex/message_ja.properties
* /opt/cola/permits/1257218116_1642790294.82/0/xercesimpl-2-12-0-sources-
jar/org/apache/xerces/impl/msg/JAXPValidationMessages.properties
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/opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/type/FileVerification.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/type/EnumArgumentType.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentParserException.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/Subparser.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/ASCIITextWidthCounter.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/ReflectHelper.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/ParseState.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/helper/TextHelper.java  
\*  
/opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/StoreTrueArgumentAction.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/ArgumentParsers.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/SubparsersImpl.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/Argument.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/ArgumentParserImpl.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/choice/RangeArgumentChoice.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/Arguments.java  
\*

/opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/AppendArgumentAction.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/type/StringArgumentType.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/inf/ArgumentParser.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/HelpArgumentAction.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/impl/action/StoreConstArgumentAction.java  
\* /opt/cola/permits/1257333064\_1642801966.95/0/argparse4j-0-8-1-sources-jar/net/sourceforge/argparse4j/internal/ArgumentImpl.java  
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 jar/net/sourceforge/argparse4j/inf/MutuallyExclusiveGroup.java

## 1.186 jetty-setuid-java 1.0.4

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\* /opt/cola/permits/1257333122\_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
 jar/org/eclipse/jetty/setuid/SetUIDListener.java  
 \* /opt/cola/permits/1257333122\_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
 jar/org/eclipse/jetty/setuid/SetUIDServer.java  
 \* /opt/cola/permits/1257333122\_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
 jar/org/eclipse/jetty/setuid/SetUID.java  
 \* /opt/cola/permits/1257333122\_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
 jar/org/eclipse/jetty/setuid/Group.java  
 \* /opt/cola/permits/1257333122\_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
 jar/org/eclipse/jetty/setuid/RLimit.java  
 \*  
 /opt/cola/permits/1257333122\_1642801905.86/0/jetty-setuid-java-1-0-4-sources-  
 jar/org/eclipse/jetty/setuid/Passwd.java

# 1.187 profiler 1.1.1

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*
* Includes Sizzle.js
* http://sizzlejs.com/
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*
* Date: Thu Jun 30 14:16:56 2011 -0400
*/
```

Found in path(s):

```
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/resources/jquery-1.6.2.min.js
```

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```
/*
* jQuery Templates Plugin 1.0.0pre
* http://github.com/jquery/jquery-tmpl
* Requires jQuery 1.4.2
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```
* /opt/cola/permits/1257333100_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/resources/jquery.templ.min.js
```

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- \* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/com/google/appengine/tools/appstats/MiniProfilerAppstats.java
- \* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfiler.java
- \* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfilerFilter.java
- \* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/resources/MiniProfilerResourceLoader.java
- \* /opt/cola/permits/1257333100\_1642801922.15/0/gae-mini-profiler-1-1-1-sources-jar/ca/jimr/gae/profiler/MiniProfilerServlet.java

## 1.188 dagger 2.4

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\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/MapKey.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/MapFactory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/Component.java

\*

/\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/InstanceFactory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/SingleCheck.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Factory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/MapProviderFactory.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Collections.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/SetFactory.java

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\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/package-info.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntKey.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/StringKey.java  
\*  
/opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/LongKey.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Beta.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/ClassKey.java  
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\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/Binds.java  
\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/Preconditions.java  
\*

/opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/internal/DoubleCheck.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-

jar/dagger/multibindings/ElementsIntoSet.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/IntoMap.java

\* /opt/cola/permits/1257772315\_1643010337.24/0/dagger-2-4-sources-jar/dagger/multibindings/package-info.java

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*/opt/cola/permits/1257772315_1643010337.24/0/dagger-2-4-sources-jar/dagger/MembersInjector.java
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## 1.189 paranamer 2.5.1

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jar/com/thoughtworks/paranamer/BytecodeReadingParanamer.java

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\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/AdaptiveParanamer.java

\* /opt/cola/permits/1257772269\_1643010353.74/0/paranamer-2-5-1-sources-jar/com/thoughtworks/paranamer/ParameterNamesNotFoundException.java

\*

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jar/com/thoughtworks/paranamer/JavadocParanamer.java

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```
* /opt/cola/permits/1258811491_1643111603.33/0/annotations-4-1-1-4-sources-
jar/android/annotation/SuppressLint.java
* /opt/cola/permits/1258811491_1643111603.33/0/annotations-4-1-1-4-sources-
jar/android/annotation/TargetApi.java
```

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\* /opt/cola/permits/1258876677\_1643115784.16/0/animal-sniffer-annotations-1-19-sources-jar/META-INF/maven/org.codehaus.mojo/animal-sniffer-annotations/pom.xml

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```
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
jar/com/google/errorprone/annotations/CompatibleWith.java
* /opt/cola/permits/1264660152_1643871085.34/0/error-prone-annotations-2-3-3-sources-
```

jar/com/google/errorprone/annotations/FormatMethod.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-  
jar/com/google/errorprone/annotations/MustBeClosed.java  
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/opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-  
jar/com/google/errorprone/annotations/RestrictedApi.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-  
jar/com/google/errorprone/annotations/FormatString.java  
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jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-  
jar/com/google/errorprone/annotations/DoNotCall.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-  
jar/com/google/errorprone/annotations/concurrent/GuardedBy.java  
\*  
/opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-  
jar/com/google/errorprone/annotations/CheckReturnValue.java  
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\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/NoAllocation.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/LockMethod.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/UnlockMethod.java  
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\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/CompileTimeConstant.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/SuppressPackageLocation.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/Immutable.java  
\*  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/RequiredModifiers.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/Var.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/ForOverride.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-jar/com/google/errorprone/annotations/concurrent/LazyInit.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-

jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java  
\* /opt/cola/permits/1264660152\_1643871085.34/0/error-prone-annotations-2-3-3-sources-  
jar/com/google/errorprone/annotations/IncompatibleModifiers.java

# 1.197 picocontainer 2.15

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* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/ProviderAdapter.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ComponentLifecycle.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/security/CustomPermissionsURLClassLoader.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ComponentMonitorStrategy.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Stored.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/FactoryInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/references/SimpleReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Guarded.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Provider.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/CompositeInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Injector.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/InjectInto.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/references/ThreadLocalMapObjectReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
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```

jar/org/picocontainer/injectors/CompositeInjection.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Injector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/MultiInjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/ObjectReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/Decorated.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Reinjection.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/references/ThreadLocalReference.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/Reinjector.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/injectors/MultiInjection.java
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jar/org/picocontainer/classname/ClassPathElement.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/ClassName.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/ClassLoadingPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/DefaultConstructorParameter.java
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/classname/DefaultClassLoadingPicoContainer.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/parameters/NullParameter.java
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jar/org/picocontainer/lifecycle/LifecycleState.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/StartableLifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/visitors/MethodCallingVisitor.java

\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/AbstractMonitoringLifecycleStrategy.java  
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jar/org/picocontainer/visitors/TraversalCheckingVisitor.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/converters/Converter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/ReflectionLifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/PicoVisitor.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/ComponentAdapter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/JavaEE5LifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/Converters.java

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/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/LifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/visitors/VerifyingVisitor.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/DefaultLifecycleState.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/CompositeLifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/lifecycle/ReflectionLifecycleException.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/visitors/AbstractPicoVisitor.java

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- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/NamedFieldInjector.java
- \*
- /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Automated.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Locked.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/NameBinding.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/AdaptingBehavior.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/PropertyApplicator.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AnnotatedFieldInjector.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/monitors/LifecycleComponentMonitor.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoContainer.java
- \*
- /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Automating.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/ComponentFactory.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/adapters/AbstractAdapter.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/Injectors.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/Characteristics.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/PropertyApplying.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/annotations/Inject.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/TransientPicoContainer.java
- \*
- /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/DefaultPicoContainer.java
- \* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-

jar/org/picocontainer/lifecycle/NullLifecycleStrategy.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/parameters/BasicComponentParameter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/Synchronizing.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/NamedMethodInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/PicoVerificationException.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/PicoException.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/annotations/Cache.java  
\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/containers/CommandLinePicoContainer.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/TypedFieldInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/adapters/InstanceAdapter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/TypedFieldInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/NamedFieldInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/parameters/CollectionComponentParameter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/Locking.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/annotations/Nullable.java  
\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/Behaviors.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/AbstractInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/BehaviorFactory.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/PicoBuilder.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/InjectionFactory.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/injectors/AnnotatedMethodInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/ImplementationHiding.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/HiddenImplementation.java  
\*

/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/parameters/ComponentParameter.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/containers/ImmutablePicoContainer.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Synchronized.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/SetterInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoClassNotFoundException.java

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jar/org/picocontainer/behaviors/Decorating.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/behaviors/FieldDecorating.java
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```
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/monitors/ComponentMonitorHelper.java
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/monitors/WriterComponentMonitor.java
```

```
*
/opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/monitors/ConsoleComponentMonitor.java
```

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*
* Original code by the committers
*****/
```

Found in path(s):

```
* /opt/cola/permits/1266565840_1644246713.67/0/picocontainer-2-15-sources-
jar/org/picocontainer/containers/AbstractDelegatingMutablePicoContainer.java
```

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/*
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*
*****/
```



\* Idea by Rachel Davies, Original code by various \*  
\*\*\*\*\*

Found in path(s):

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/containers/CompositePicoContainer.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/MutablePicoContainer.java

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\* Original code by Mauro Talevi \*

\*\*\*\*\*

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/monitors/AbstractComponentMonitor.java

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\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-  
jar/org/picocontainer/behaviors/AbstractBehaviorFactory.java

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Found in path(s):







\* Idea by Rachel Davies, Original code by Aslak Hellesoy and Paul Hammant \*  
\*\*\*\*\*/

Found in path(s):

\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/ThreadCached.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Guarding.java  
\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/SetterInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/MethodInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AnnotatedMethodInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/AdaptingInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/ConstructorInjection.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/ThreadCaching.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/injectors/ConstructorInjector.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Storing.java  
\*  
/opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Caching.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/PicoCompositionException.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/OptInCaching.java  
\* /opt/cola/permits/1266565840\_1644246713.67/0/picocontainer-2-15-sources-jar/org/picocontainer/behaviors/Cached.java

## 1.198 handy-uri-templates 2.1.8

### 1.198.1 Available under license :

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- \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/Operator.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/Expression.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/UriUtil.java
  - \*
  - /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/UriTransient.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/Modifier.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/VariableExpansionException.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/VarName.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/VarExploder.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/VarSpec.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/UriTemplate.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/DefaultVarExploder.java
  - \*
  - /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/UriTemplateParser.java
  - \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/com/damnhandy/uri/template/impl/VarExploderFactory.java
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Found in path(s):

- \* /opt/cola/permits/1273317603\_1645099869.69/0/handy-uri-templates-2-1-8-sources-jar/META-INF/maven/com.damnhandy/handy-uri-templates/pom.xml
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```
* /opt/cola/permits/1273317603_1645099869.69/0/handy-uri-templates-2-1-8-sources-
jar/com/damnhandy/uri/template/MalformedUriTemplateException.java
```

# 1.199 classgraph 4.8.21

## 1.199.1 Available under license :

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```
/*
* This file is part of ClassGraph.
*
* Author: Michael J. Simons
*
* Hosted at: https://github.com/classgraph/classgraph
*
* --
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\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-

jar/nonapi/io/github/classgraph/classloaderhandler/SpringBootRestartClassLoaderHandler.java

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/\*

\* This file is part of ClassGraph.

\*

\* Author: Luke Hutchison

\*

\* Hosted at: <https://github.com/classgraph/classgraph>

\*

\* --

\*

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Found in path(s):

- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/FieldTypeInfo.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/Id.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/utils/FileUtils.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ClasspathElementModule.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxClassLoaderHandler.java
- \*
- /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/utils/JarUtils.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/JSONUtils.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ModulePathInfo.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/PackageInfoList.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/types/TypeUtils.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/utils/URLPathEncoder.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classpath/SystemJarFinder.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/FastZipEntry.java
- \*
- /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/URLClassLoaderHandler.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/recycler/Resettable.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/TomcatWebappClassLoaderBaseHandler.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/MethodParameterInfo.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/GraphvizDotfileGenerator.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/Classfile.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/utils/FastPathResolver.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandlerRegistry.java
- \*
- /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/AnnotationClassRef.java
- \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-

```

jar/nonapi/io/github/classgraph/WhiteBlackList.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/AnnotationInfoList.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/HierarchicalTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/TypeParameter.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONReference.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/NestedJarHandler.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ArrayTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/OSGiDefaultClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/MethodTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClasspathElementZip.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/TypeResolutions.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/recycler/RecycleOnClose.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/FallbackClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONSerializer.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassInfoList.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/fastzipfilereader/LogicalZipFile.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/ScanSpec.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/Utils/LogNode.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/types/Parser.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleRef.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassRefTypeSignature.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/HasName.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-

```

```

jar/io/github/classgraph/FieldInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/WeblogicClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ObjectTypedValueWrapper.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/recycler/Recycler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassGraphException.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClassRefOrTypeVariableSignature.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/Utils/ReflectionUtils.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ClasspathElementDir.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classpath/CallStackReader.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/Utils/CollectionUtils.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/json/JSONObject.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/AnnotationParameterValue.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/AnnotationInfo.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleReaderProxy.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ScanResult.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ReferenceTypeSignature.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/concurrency/InterruptChecker.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/ClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/nonapi/io/github/classgraph/classloaderhandler/ParentLastDelegationOrderTestClassLoaderHandler.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ScanResultObject.java
* /opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/ModuleInfoList.java
*
/opt/cola/permits/1273317276_1645099928.41/0/classgraph-4-8-21-sources-
jar/io/github/classgraph/TypeVariableSignature.java

```

\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classpath/ClassLoaderAndModuleFinder.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classpath/ClasspathFinder.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/ZipFileSlice.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/JSONArray.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/JSONDeserializer.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/MethodInfo.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/PhysicalZipFile.java  
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 /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/EquinoxContextFinderClassLoaderHandler.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/concurrency/SingletonMap.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/PackageInfo.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/types/ParseException.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/ClassFields.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/BaseTypeSignature.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/TypeSignature.java  
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 /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/Utils/Join.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/JPMSCClassLoaderHandler.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/Resource.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/MappableInfoList.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ClasspathElement.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/MethodInfoList.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ClassGraph.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/Scanner.java  
 \* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/Utils/InputStreamOrByteBufferAdapter.java  
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/opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/Utils/VersionFinder.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/ReferenceEqualityKey.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/AnnotationParameterValueList.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/ZipFileSliceReader.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/InfoList.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/FieldInfoList.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/AnnotationEnumValue.java  
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/opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/fastzipfilereader/RecyclableInflater.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ClassTypeSignature.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classloaderhandler/PlexusClassWorldsClassRealmClassLoaderHandler.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classpath/ClassLoaderOrder.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/ClassGraphClassLoader.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/classpath/ClasspathOrder.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/ParameterizedTypeImpl.java  
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/opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/concurrency/WorkQueue.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/io/github/classgraph/TypeArgument.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/ClassFieldCache.java  
\* /opt/cola/permits/1273317276\_1645099928.41/0/classgraph-4-8-21-sources-jar/nonapi/io/github/classgraph/json/JSONParser.java  
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jar/org/slf4j/bridge/SLF4JBridgeHandler.java
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/opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/DoNotMock.java

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\* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/CheckReturnValue.java  
\* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java

\*

/opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java

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- \* /opt/cola/permits/1287386049\_1647249958.14/0/error-prone-annotations-2-10-0-sources-jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
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## 1.210 jcl-over-slf4j 1.7.36

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# 1.211 logback-access 1.2.11

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jar/com/google/common/math/Quantiles.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/eventbus/SubscriberRegistry.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/eventbus/Dispatcher.java  
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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/MoreObjects.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/TrustedListenableFutureTask.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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jar/com/google/common/collect/Tables.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

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jar/com/google/common/collect/Collections2.java  
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jar/com/google/common/collect/ImmutableCollection.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ImmutableEntry.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/thirdparty/publicsuffix/PublicSuffixPatterns.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/TreeBasedTable.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ImmutableMapEntrySet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ImmutableMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ImmutableListMultimap.java



\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableIterator.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EmptyImmutableListMultimap.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CollectPreconditions.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/ImmutableSupplier.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ExecutionSequencer.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/io/Java8Compatibility.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/Java8Compatibility.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/ToDoubleRounder.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/OverflowAvoidingLockSupport.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/Java8Compatibility.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/BigDecimalMath.java  
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jar/com/google/common/util/concurrent/AtomicLongMap.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/Present.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/ListeningScheduledExecutorService.java

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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/primitives/UnsignedInts.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/cache/RemovalListeners.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/Hashing.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/cache/CacheStats.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/MathPreconditions.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/AbstractCompositeHashFunction.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/package-info.java  
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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/DoubleMath.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/Funnels.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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jar/com/google/common/util/concurrent/WrappingExecutorService.java  
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jar/com/google/common/cache/CacheBuilderSpec.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/Murmur3\_32HashFunction.java  
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jar/com/google/common/hash/HashCode.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/cache/ForwardingLoadingCache.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/reflect/TypeParameter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/cache/package-info.java  
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jar/com/google/common/primitives/UnsignedLongs.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/math/DoubleUtils.java  
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jar/com/google/common/cache/RemovalCause.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/Optional.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/HashFunction.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/LongMath.java  
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 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Murmur3\_128HashFunction.java  
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 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSortedMultiset.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/UnsignedLong.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/Funnel.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Ticker.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/UnsignedInteger.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingListeningExecutorService.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FunctionalEquivalence.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/Types.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/RemovalNotification.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/IntMath.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/BloomFilterStrategies.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Enums.java  
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 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/Cache.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/CacheLoader.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/HostAndPort.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularContiguousSet.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractNonStreamingHashFunction.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

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jar/com/google/common/math/BigIntegerMath.java
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/LoadingCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractListeningExecutorService.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/MessageDigestHashFunction.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/AbstractCache.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/CycleDetectingLockFactory.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/PairwiseEquivalence.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/UncheckedExecutionException.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/TreeRangeSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/PrimitiveSink.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/ParseRequest.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Queues.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Absent.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/Weigher.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/Crc32cHashFunction.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractHasher.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Uninterruptibles.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ImmutableDoubleArray.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ImmutableIntArray.java

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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractHashFunction.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ImmutableLongArray.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingCondition.java

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\* Holder for web specializations of methods of { @code Shorts }. Intended to be empty for regular  
\* version.  
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jar/com/google/common/primitives/ShortsMethodsForWeb.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/BaseImmutableMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/IndexedImmutableSet.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSequentialIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedMapDifference.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RowSortedTable.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableListIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableCollection.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingListMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MinMaxPriorityQueue.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/IncidentEdgeSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompactHashing.java



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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Runnables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/SubscriberExceptionContext.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/TypeVisitor.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/HashingInputStream.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/WrappingScheduledExecutorService.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/CharSequenceReader.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Utf8.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/VerifyException.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/thirdparty/publicsuffix/PublicSuffixType.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/eventbus/SubscriberExceptionHandler.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Verify.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/FilteredMultimapValues.java
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 */
```

```
/**
 * Returns an array containing all of the elements in the specified collection. This method
 * returns the elements in the order they are returned by the collection's iterator. The returned
 * array is "safe" in that no references to it are maintained by the collection. The caller is
 * thus free to modify the returned
array.
 *
 * <p>This method assumes that the collection size doesn't change while the method is running.
 *
 * <p>TODO(kevinb): support concurrently modified collections?
 *
 * @param c the collection for which to return an array of elements
 */
```

Found in path(s):

```
*/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ObjectArrays.java
```

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Strings.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ThreadFactoryBuilder.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Atomics.java

\*

\*/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedLists.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Monitor.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Ascii.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingBlockingQueue.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/package-info.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListeningExecutorService.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ContiguousSet.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/Beta.java

\*

```
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Equivalence.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/UncaughtExceptionHandler.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/package-info.java
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```

```
*/
```

```
/**
```

```
* Holder for web specializations of methods of { @code Floats }. Intended to be empty for regular
* version.
```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/FloatsMethodsForWeb.java
```

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MapRetrievalCache.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/DirectedNetworkConnections.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ForwardingNetwork.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/HashMultimapGwtSerializationDependencies.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/UndirectedGraphConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Comparators.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/EdgesConnecting.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/NetworkBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/StandardMutableValueGraph.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/StandardNetwork.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ForwardingValueGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ValueGraphBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MapIteratorCache.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/StandardMutableGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/NetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/GraphBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ArrayListMultimapGwtSerializationDependencies.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractDirectedNetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/LinkedHashMultimapGwtSerializationDependencies.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/StandardValueGraph.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/GraphConstants.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RangeGwtSerializationDependencies.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/EndpointPairIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ImmutableValueGraph.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/EndpointPair.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/GraphConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/UndirectedMultiNetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ValueGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ForwardingGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MultiEdgesConnecting.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableValueGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/UndirectedNetworkConnections.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractGraphBuilder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractUndirectedNetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/DirectedMultiNetworkConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/StandardMutableNetwork.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/DirectedGraphConnections.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractNetwork.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ElementOrder.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableMultisetGwtSerializationDependencies.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/AbstractGraph.java  
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*/
/**
* Holder for extra methods of {@code Objects} only in web. Intended to be empty for regular
* version.
*/
```

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/ExtraObjectsMethodsForWeb.java
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jar/com/google/common/collect/SortedMultisets.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SortedMultiset.java
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/DescendingImmutableSortedSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/CompactLinkedHashSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RangeMap.java  
\*  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingDeque.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableAsList.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingImmutableMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredEntrySetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EvictingQueue.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredEntryMultimap.java  
\*  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractSortedKeySortedSetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredKeyListMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredSetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractNavigableMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/UnmodifiableSortedMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-



jar/com/google/common/collect/TransformedIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/TreeRangeMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/TreeTraverser.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ForwardingImmutableSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/SortedMultisetBridge.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/AllEqualOrdering.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/CompactHashSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/ForwardingBlockingDeque.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ForwardingNavigableMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/CompactHashMap.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ImmutableEnumMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/AbstractMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ForwardingNavigableSet.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ForwardingBlockingDeque.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ForwardingImmutableList.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/DescendingMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/FilteredKeySetMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/CompactLinkedHashMap.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/TransformedListIterator.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/LittleEndianByteArray.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AggregateFutureState.java  
\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/MacHashFunction.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/FarmHashFingerprint64.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/Platform.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ReaderInputStream.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ConsumingQueueIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/InterruptibleTask.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/CombinedFuture.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/LongAdder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/LongAdder.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AtomicDoubleArray.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/Striped64.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/MultiInputStream.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Objects.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableSoftReference.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LineReader.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Charsets.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableWeakReference.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LineBuffer.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Predicate.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ExecutionList.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ByteStreams.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Function.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Files.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/AsyncEventBus.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/AbstractIterator.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/DeadEvent.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/package-info.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizablePhantomReference.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableReferenceQueue.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Interners.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Predicates.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CountingInputStream.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CharStreams.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Suppliers.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListenableFuture.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Supplier.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Primitives.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractFuture.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/EventBus.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CountingOutputStream.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Closeables.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Defaults.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Flushables.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Throwables.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/HashBiMap.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/AllowConcurrentEvents.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LittleEndianDataInputStream.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Functions.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/FinalizableReference.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/package-info.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/EnumMultiset.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/package-info.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/package-info.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Preconditions.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LittleEndianDataOutputStream.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/DirectExecutor.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/SuccessorsFunction.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableGraph.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Network.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/PredecessorsFunction.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Graphs.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TopKSelector.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/MutableNetwork.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ImmutableGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ImmutableNetwork.java

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jar/com/google/common/collect/MultimapBuilder.java

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jar/com/google/common/graph/package-info.java

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*
* As of 2010/06/11, this method is identical to the (package private) hash method in OpenJDK 7's
* java.util.HashMap
class.
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Striped.java
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*/
/**
* Not supported. You are attempting to create a map that may contain a non-{@code Comparable}
* key. Proper calls will resolve to the version in {@code ImmutableSortedMap}, not this dummy
* version.
*
* @throws UnsupportedOperationException always
* @deprecated Pass a key of type {@code Comparable}
to use {@link
* ImmutableSortedMap#of(Comparable, Object)}.
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java
```

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jar/com/google/common/primitives/Platform.java

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jar/com/google/common/html/package-info.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/BaseEncoding.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/io/ByteSink.java

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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/StandardSystemProperty.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/reflect/ImmutableTypeToInstanceMap.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/CartesianList.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/ServiceManager.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableRangeMap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/PairedStatsAccumulator.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/AbstractByteHasher.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/Closer.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/PairedStats.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/SipHashFunction.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/LongAddable.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/package-info.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/ClassPath.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CharSink.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/package-info.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/ChecksumHashFunction.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/TypeCapture.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/package-info.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/FilteredKeyMultimap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/FileWriteMode.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/Invokable.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableRangeSet.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/LongAddable.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/CharSource.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/MutableTypeToInstanceMap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/TypeToInstanceMap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

```
jar/com/google/common/math/LinearTransformation.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ListenableScheduledFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/SmoothRateLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/RateLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/hash/LongAddables.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ByteSource.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/StatsAccumulator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/math/Stats.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/LongAddables.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/Parameter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/AbstractInvocationHandler.java
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Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ObjectCountLinkedHashMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ClosingFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/AbstractBaseGraph.java
*
```

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/Traverser.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/BaseGraph.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ObjectCountHashMap.java  
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 */
/*
 * This following method is a modified version of one found in
 * http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/src/test/tck/AbstractExecutorServiceTest.java?revision=1.30
 * which contained the following notice:
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Floats.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/SequentialExecutor.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Shorts.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Ints.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/InetAddresses.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Longs.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/MultiReader.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/UnicodeEscaper.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Doubles.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ListenableFutureTask.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Chars.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/PercentEscaper.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/internal/Finalizer.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/CharMatcher.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/thirdparty/publicsuffix/TrieParser.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Joiner.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/Escaper.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Converter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/Booleans.java  
\*

```
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/Stopwatch.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/FluentIterable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/Bytes.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/FileBackedOutputStream.java
```

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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSortedMap.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ArrayTable.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSetMultimap.java
```

```
*
```

```
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableSortedSet.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableTable.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ComputationException.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractIndexedListIterator.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/EmptyImmutableSetMultimap.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableClassToInstanceMap.java
```

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableEnumSet.java
```

```
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ComparisonChain.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableAsList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SingletonImmutableTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/DiscreteDomain.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingTable.java
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express
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*/
/**
* Outer class that exists solely to let us write {@code Partially.GwtIncompatible} instead of plain
* {@code GwtIncompatible}. This is more accurate for {@link Futures#catching}, which is available
* under GWT but with a slightly different signature.
*
* <p>We can't use {@code PartiallyGwtIncompatible} because then the GWT compiler
wouldn't recognize
* it as a {@code GwtIncompatible} annotation. And for {@code Futures.catching}, we need the GWT
* compiler to autostrip the normal server method in order to expose the special, inherited GWT
* version.
*/
```

Found in path(s):

```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Partially.java
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jar/com/google/common/collect/ForwardingMapEntry.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ExplicitOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Multiset.java
*
 /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LexicographicalOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractSortedSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/UsingToStringOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/RegularImmutableSet.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingObject.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingQueue.java
*
 /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/EnumBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/EnumHashBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ConcurrentHashMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/NullsFirstOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
```



```

jar/com/google/common/collect/ImmutableList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Multimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/CompoundOrdering.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMapBasedMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ByFunctionOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/SortedSetMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingList.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/HashMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingSet.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMapEntry.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/package-info.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractMultiset.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Lists.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingListIterator.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedListMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/NaturalOrdering.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingMultiset.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/AbstractBiMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/LinkedHashMultimap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ForwardingMultimap.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ReverseNaturalOrdering.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractListMultimap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSortedMap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SetMultimap.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Multisets.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SingletonImmutableSet.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MutableClassToInstanceMap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MapDifference.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/NullsLastOrdering.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Ordering.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSet.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/TreeMultiset.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Sets.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingCollection.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Synchronized.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ListMultimap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ReverseOrdering.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractMapBasedMultimap.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Multimaps.java  
 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ArrayListMultimap.java  
 \*  
 /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSortedSet.java  
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 \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/collect/TreeMultimap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
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jar/com/google/common/collect/Iterators.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/Maps.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/ComparatorOrdering.java  
\*  
/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/LinkedHashMultiset.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/Interner.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/BiMap.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/collect/Iterables.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/util/concurrent/ServiceManagerBridge.java  
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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/hash/package-info.java  
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jar/com/google/common/collect/Hashing.java  
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jar/com/google/common/base/PatternCompiler.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/CommonPattern.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/JdkPattern.java  
\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-  
jar/com/google/common/base/CommonMatcher.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ArrayBasedUnicodeEscaper.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/MapMakerInternalMap.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractExecutionThreadService.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/HostSpecifier.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/TypeResolver.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Platform.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/GwtIncompatible.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/annotations/GwtCompatible.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractIdleService.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ReferenceEntry.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/UnsignedBytes.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ForwardingFuture.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

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jar/com/google/common/escape/ArrayBasedCharEscaper.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ByteProcessor.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/html/HtmlEscapers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/net/UrlEscapers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/Cut.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Callables.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/ArrayBasedEscaperMap.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/MapMaker.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingFluentFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/ForwardingListenableFuture.java
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/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/Escapers.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/DenseImmutableTable.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/CacheBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/SettableFuture.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/Service.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/Platform.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AbstractService.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/LocalCache.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/LineProcessor.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/XmlEscapers.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SparseImmutableTable.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/base/Splitter.java  
\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/SignedBytes.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/TimeoutFuture.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/FluentFuture.java

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/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/CharEscaper.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/UncheckedTimeoutException.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/GwtFuturesCatchingSpecialization.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/AbstractTransformFuture.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/SimpleTimeLimiter.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/PatternFilenameFilter.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-



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jar/com/google/common/reflect/TypeToken.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/annotations/VisibleForTesting.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
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* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/GwtFluentFutureCatchingSpecialization.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/TimeLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/FakeTimeLimiter.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/escape/CharEscaperBuilder.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/AggregateFuture.java
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```
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/util/concurrent/NullnessCasts.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
```

jar/com/google/common/base/NullnessCasts.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/collect/NullnessCasts.java

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\*/

/\*\*

\* Holder for web specializations of methods of { @code Doubles}. Intended to be empty for regular  
\* version.

\*/

Found in path(s):

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

jar/com/google/common/primitives/DoublesMethodsForWeb.java

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jar/com/google/common/base/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/ParametricNullness.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/net/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/html/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/cache/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/reflect/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ParametricNullness.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/hash/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/escape/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/ParametricNullness.java

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\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/xml/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/math/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ParametricNullness.java

\*

/opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/io/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/primitives/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/graph/ElementTypesAreNonnullByDefault.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/util/concurrent/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/eventbus/ParametricNullness.java

\* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-

```
jar/com/google/common/util/concurrent/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/graph/ParametricNullness.java
*
/opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/reflect/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/collect/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/io/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/base/ElementTypesAreNonnullByDefault.java
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/cache/ElementTypesAreNonnullByDefault.java
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/**
* Holder for web specializations of methods of { @code Ints }. Intended to be empty for regular
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```

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Found in path(s):
* /opt/cola/permits/1312950193_1650560245.64/0/guava-31-0-1-android-sources-1-
jar/com/google/common/primitives/IntsMethodsForWeb.java
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- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSortedMultiset.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/Count.java
- \*
- /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RangeSet.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ForwardingSortedMultiset.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/ImmutableSortedMultisetFauxverideShim.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/GeneralRange.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/SortedIterable.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/RegularImmutableSortedMultiset.java
- \* /opt/cola/permits/1312950193\_1650560245.64/0/guava-31-0-1-android-sources-1-jar/com/google/common/collect/AbstractRangeSet.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/DateTypeAdapter.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/ConstructorConstructor.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/UnsafeAllocator.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/JsonTreeReader.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java  
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/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/CollectionTypeAdapterFactory.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/TypeAdapterFactory.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-

jar/com/google/gson/internal/JsonReaderInternalAccess.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/bind/ReflectiveTypeAdapterFactory.java  
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jar/com/google/gson/internal/bind/TypeAdapters.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/bind/ObjectTypeAdapter.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/TypeAdapter.java  
\*  
/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/bind/JsonTreeWriter.java  
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jar/com/google/gson/JsonElement.java  
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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonArray.java  
\*  
/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/FieldNamingStrategy.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/annotations/SerializedName.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/JsonDeserializationContext.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/internal/Excluder.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-  
jar/com/google/gson/FieldNamingPolicy.java  
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jar/com/google/gson/internal/\$Gson\$Preconditions.java

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/bind/DefaultDateTypeAdapter.java  
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/opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/ObjectConstructor.java  
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\*  
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```

Found in path(s):

```
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/ToNumberPolicy.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/ToNumberStrategy.java
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Found in path(s):

\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonSyntaxException.java  
\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/Streams.java

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\* /opt/cola/permits/1330613678\_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/internal/\$Gson\$Types.java

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```
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/JsonStreamParser.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/LongSerializationPolicy.java
* /opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-
jar/com/google/gson/FieldAttributes.java
*
/opt/cola/permits/1330613678_1652979131.328877/0/gson-2-8-9-sources-2-jar/com/google/gson/JsonParser.java
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## 1.224 gson 2.9.0

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* /opt/cola/permits/1331093984_1653033295.598981/0/gson-2-9-0-sources-1-
jar/com/google/gson/ToNumberStrategy.java
* /opt/cola/permits/1331093984_1653033295.598981/0/gson-2-9-0-sources-1-
jar/com/google/gson/ToNumberPolicy.java
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* /opt/cola/permits/1331093984_1653033295.598981/0/gson-2-9-0-sources-1-
jar/com/google/gson/internal/GsonBuildConfig.java
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```
* /opt/cola/permits/1331093984_1653033295.598981/0/gson-2-9-0-sources-1-
jar/com/google/gson/internal/bind/CollectionTypeAdapterFactory.java
* /opt/cola/permits/1331093984_1653033295.598981/0/gson-2-9-0-sources-1-
jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java
* /opt/cola/permits/1331093984_1653033295.598981/0/gson-2-9-0-sources-1-
jar/com/google/gson/internal/bind/TypeAdapters.java
*
```

/opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/bind/ArrayTypeAdapter.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/bind/ReflectiveTypeAdapterFactory.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/JsonReaderInternalAccess.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/TypeAdapterFactory.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/TypeAdapterFactory.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/bind/JsonTreeReader.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/bind/ObjectTypeAdapter.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/bind/JsonTreeWriter.java  
\*

/opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/bind/MapTypeAdapterFactory.java

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\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/annotations/JsonAdapter.java

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\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/FieldAttributes.java

\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonParser.java

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jar/com/google/gson/internal/\$Gson\$Types.java  
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jar/com/google/gson/stream/JsonReader.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-  
jar/com/google/gson/stream/JsonToken.java  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-  
jar/com/google/gson/stream/JsonScope.java  
\*  
\* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-  
jar/com/google/gson/stream/MalformedJsonException.java  
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jar/com/google/gson/stream/JsonWriter.java  
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- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/Gson.java
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- /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonPrimitive.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonIOException.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/reflect/TypeToken.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/annotations/Expose.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/ObjectConstructor.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/annotations/Since.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/\$Gson\$Preconditions.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/Excluder.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/FieldNamingStrategy.java
- \*
- /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonElement.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonDeserializer.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/InstanceCreator.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonArray.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonObject.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/JsonDeserializationContext.java
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- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/sql/SqlTimeTypeAdapter.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/sql/SqlDateTypeAdapter.java
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- /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/ConstructorConstructor.java
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- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/UnsafeAllocator.java
- \* /opt/cola/permits/1331093984\_1653033295.598981/0/gson-2-9-0-sources-1-jar/com/google/gson/internal/bind/TreeTypeAdapter.java

## 1.225 glibc 2.17-326.el7\_9

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do

this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the

Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy

from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

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#### Appendix: How to Apply These Terms to Your New Libraries

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
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```

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<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

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@subheading Preamble

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When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General

Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

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Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

#### @subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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The modified work must itself be a software library.

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You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must

cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

@item

If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library

with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the



library". The executable is therefore covered by this License.  
Section 6 states terms for distribution of such executables.

When a ``work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise,  
if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

@item

As an exception to the Sections above, you may also combine or link a ``work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

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Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the

user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

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Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

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If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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a)

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## 1.226 zstd-jni 1.5.2-1

### 1.226.1 Available under license :

No license file was found, but licenses were detected in source scan.

Manifest-Version: 1.0

Automatic-Module-Name: com.github.luben.zstd\_jni

Bnd-LastModified: 1642851452470

Bundle-Description: JNI bindings for Zstd native library that provides fast and high compression lossless algorithm for Java and all JVM languages.

Bundle-License: <https://opensource.org/licenses/BSD-2-Clause>;description=BSD 2-Clause License

Bundle-ManifestVersion: 2

Bundle-Name: zstd-jni

Bundle-NativeCode: darwin/x86\_64/libzstd-jni-1.5.2-1.dylib;osname=MacOS;osname=MacOSX;processor=x86\_64, darwin/aarch64/libzstd-jni-1.5.2-1.dylib;osname=MacOS;osname=MacOSX;processor=aarch64, freebsd/amd64/libzstd-jni-1.5.2-1.so;osname=FreeBSD;processor=amd64, freebsd/i386/libzstd-jni-1.5.2-1.so;osname=FreeBSD;processor=i386, linux/aarch64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=aarch64, linux/amd64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=amd64, linux/arm/libzstd-jni-1.5.2-1.so;osname=Linux;processor=arm, linux/i386/libzstd-jni-1.5.2-1.

so;osname=Linux;processor=i386, linux/mips64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=mips64, linux/ppc64/libzstd-jni-1.5.2-1.so;osname=Linux;processor=ppc64, linux/ppc64le/libzstd-jni-1.5.2-1.so;osname=Linux;processor=ppc64le, linux/s390x/libzstd-jni-1.5.2-1.so;osname=L

linux;processor=s390x, win/amd64/libzstd-jni-1.5.2-1.dll;osname=Win32;  
processor=amd64, win/x86/libzstd-jni-1.5.2-1.dll;osname=Win32;process  
or=x86  
Bundle-SymbolicName: com.github.luben.zstd-jni  
Bundle-Vendor: com.github.luben  
Bundle-Version: 1.5.2.1  
Created-By: 11.0.14 (Debian)  
Export-Package: com.github.luben.zstd;version="1.5.2.1",com.github.lub  
en.zstd.util;version="1.5.2.1"  
Implementation-Title: zstd-jni  
Implementation-Vendor: com.github.luben  
Implementation-Vendor-Id: com.github.luben  
Implementation-Version: 1.5.2-1  
Import-Package: org.osgi.framework;resolution:=optional  
Private-Package: linux.amd64,linux.i386,linux.aarch64,linux.arm,linux.  
ppc64,linux.ppc64le,linux.mips64,linux.s390x,darwin.x86\_64,darwin.aar  
ch64,win.amd64,win.x86,freebsd.amd64,freebsd.i386  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=11.0))  
"  
Specification-Title: zstd-jni  
Specification-Vendor: com.github.luben  
Specification-Version: 1.5.2-1  
Tool: Bnd-4.0.0.201805111645

Found in path(s):

\* /opt/cola/permits/1337889408\_1654234488.39181/0/zstd-jni-1-5-2-1-jar/META-INF/MANIFEST.MF

# 1.227 xz 5.2.2-2.el7\_9

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## 1.228 okhttp 4.10.0

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## 1.233 zlib 1.2.11

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/\* zlib.h -- interface of the 'zlib' general purpose compression library  
version 1.2.11, January 15th, 2017

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\*/

## 1.234 logback-throttling-appender 1.1.9

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\* /opt/cola/permits/1368298591\_1658301187.6939363/0/logback-throttling-appender-1-1-9-1-jar/META-INF/maven/io.dropwizard.logback/logback-throttling-appender/pom.xml

## 1.235 glibc-common 2.17-326.el7\_9

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@c Local Variables:

@c ispell-local-pdict: "ispell-dict"

@c End:

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## 1.236 libnsl 2.17

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## 1.238 python-gobject-base 3.22.0-1.el7\_4.1

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That's all there is to it!

## 1.239 python-urlgrabber 3.10

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Version 2.1, February 1999

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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## 1.241 wsgiref 0.1.2

### 1.241.1 Available under license :

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```

Found in path(s):

```
* /opt/cola/permits/1403963770_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/wsgiref/validate.py
```

No license file was found, but licenses were detected in source scan.

Metadata-Version: 1.0

Name: wsgiref

Version: 0.1.2

Summary: WSGI (PEP 333) Reference Library

Home-page: <http://cheeseshop.python.org/pypi/wsgiref>

Author: Phillip J. Eby

Author-email: [web-sig@python.org](mailto:web-sig@python.org)

License: PSF or ZPL

Description: This is a standalone release of the ``wsgiref`` library to be included in Python 2.5. For the standalone version's documentation, see:

HTML

[http://peak.telecommunity.com/wsgiref\\_docs/](http://peak.telecommunity.com/wsgiref_docs/)

PDF

<http://peak.telecommunity.com/wsgiref.pdf>

Platform: UNKNOWN

Found in path(s):

\* /opt/cola/permits/1403963770\_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/wsgiref.egg-info/PKG-INFO

\* /opt/cola/permits/1403963770\_1661913703.6112542/0/wsgiref-0-1-2-2-zip/wsgiref-0.1.2/PKG-INFO

## 1.242 rpm-python 4.11.3-48.el7\_9

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs

(which use some of those functions and data) to form executables.

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d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library  
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Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work.

(Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

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b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.



For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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<one line to give the library's name and a brief idea of what it does.>  
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Ty Coon, President of Vice

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# 1.243 pygobject 3.22.0

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does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

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The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

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2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves,

then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

Any

executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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jar/javassist/bytecode/BadBytecode.java  
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jar/javassist/expr/MethodCall.java  
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jar/javassist/tools/framedump.java  
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jar/javassist/compiler/ast/Visitor.java  
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/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/tools/rmi/Sample.java  
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 \* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/CtArray.java  
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jar/javassist/bytecode/ClassFile.java
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* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/expr/Cast.java
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jar/javassist/bytecode/SourceFileAttribute.java
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jar/javassist/convert/TransformNew.java
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jar/javassist/tools/reflect/CannotInvokeException.java

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jar/javassist/expr/NewExpr.java
* /opt/cola/permits/1434218610_1664996210.5127783/0/javassist-3-29-2-ga-sources-
jar/javassist/bytecode/CodeAnalyzer.java

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Found in path(s):

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/FloatMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/MemberValueVisitor.java

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/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/MemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/LongMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/CharMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/ByteMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/ClassMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/Annotation.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/ArrayMemberValue.java

\*

/opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/DoubleMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/ShortMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/IntegerMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/StringMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/EnumMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/BooleanMemberValue.java

\* /opt/cola/permits/1434218610\_1664996210.5127783/0/javassist-3-29-2-ga-sources-jar/javassist/bytecode/annotation/AnnotationMemberValue.java

## 1.252 metrics-annotation 4.2.12

### 1.252.1 Available under license :

No license file was found, but licenses were detected in source scan.

Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.annotation

Build-Jdk-Spec: 11

Bundle-Description: A dependency-less package of just the annotations used by other Metrics modules.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Annotations for Metrics

Bundle-SymbolicName: io.dropwizard.metrics.annotation

Bundle-Version: 4.2.12

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.annotation;version="4.2.12"

Implementation-Title: Annotations for Metrics

Implementation-Version: 4.2.12

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1435925682\_1665131991.1248417/0/metrics-annotation-4-2-12-jar/META-INF/MANIFEST.MF

## 1.253 expat 2.1.0-15.el7\_9

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# 1.254 metrics-logback 4.2.12

## 1.254.1 Available under license :

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Manifest-Version: 1.0  
Automatic-Module-Name: com.codahale.metrics.logback  
Build-Jdk-Spec: 11  
Bundle-Description: An instrumented appender for Logback.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: Metrics Integration for Logback  
Bundle-SymbolicName: io.dropwizard.metrics.logback  
Bundle-Version: 4.2.12  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.logback;uses:="ch.qos.logback.classic.spi,ch.qos.logback.core,com.codahale.metrics";version="4.2.12"  
Implementation-Title: Metrics Integration for Logback  
Implementation-Version: 4.2.12  
Import-Package: ch.qos.logback.classic;version="[1.2,2)",ch.qos.logback.classic.spi;version="[1.2,2)",ch.qos.logback.core;version="[1.2,2)",com.codahale.metrics;version="[4.2,5)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\*

/opt/cola/permits/1437913135\_1665412964.3274512/0/metrics-logback-4-2-12-jar/META-INF/MANIFEST.MF

# 1.255 metrics-jersey2 4.2.12

## 1.255.1 Available under license :

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Manifest-Version: 1.0  
Automatic-Module-Name: com.codahale.metrics.jersey2  
Build-Jdk-Spec: 11  
Bundle-Description: A set of class providing Metrics integration for Jersey, the reference JAX-RS implementation.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: Metrics Integration for Jersey 2.x  
Bundle-SymbolicName: io.dropwizard.metrics.jersey2  
Bundle-Version: 4.2.12  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.jersey2;uses:="com.codahale.metri

cs.javax.ws.rs.core,javax.ws.rs.ext,org.glassfish.jersey.server.model  
,org.glassfish.jersey.server.monitoring";version="4.2.12"  
Implementation-Title: Metrics Integration for Jersey 2.x  
Implementation-Version: 4.2.12  
Import-Package: com.codahale.metrics;version="[4.2,5)",com.codahale.me  
trics.annotation;version="[4.2,5)",javax.ws.rs.core;version="[2.1,3)"  
,javax.ws.rs.ext;version="[2.1,3)",org.glassfish.jersey.server;versio  
n="[2.36,3)",org.glassfish.jersey.server.model;version="[2.36,3)",org  
.glassfish.jersey.server.monitoring;version="[2.36,3)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1437913170\_1665412973.240013/0/metrics-jersey2-4-2-12-jar/META-INF/MANIFEST.MF

## 1.256 metrics-caffeine 4.2.12

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```
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*/
```

Found in path(s):

\* /opt/cola/permits/1437913198\_1665412943.6989489/0/metrics-caffeine-4-2-12-sources-  
jar/com/codahale/metrics/caffeine/MetricsStatsCounter.java

## 1.257 protobuf-java 3.19.6

### 1.257.1 Available under license :

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Manifest-Version: 1.0

Automatic-Module-Name: com.google.protobuf  
Bnd-LastModified: 1664485905970  
Build-Jdk: 1.8.0\_181-google-v7  
Built-By: mkruskal  
Bundle-Description: Core Protocol Buffers library. Protocol Buffers are a way of encoding structured data in an efficient yet extensible format.  
Bundle-DocURL: <https://developers.google.com/protocol-buffers/>  
Bundle-License: <https://opensource.org/licenses/BSD-3-Clause>  
Bundle-ManifestVersion: 2  
Bundle-Name: Protocol Buffers [Core]  
Bundle-SymbolicName: com.google.protobuf  
Bundle-Version: 3.19.6  
Created-By: Apache Maven Bundle Plugin  
Export-Package: com.google.protobuf;version="3.19.6"  
Import-Package: sun.misc;resolution:=optional,com.google.protobuf;version="[3.19,4)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.7))"  
Tool: Bnd-3.0.0.201509101326

Found in path(s):

\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/META-INF/MANIFEST.MF

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Found in path(s):

\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/timestamp.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/struct.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/wrappers.proto  
\*  
/opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/type.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/empty.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/any.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/descriptor.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/duration.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/field\_mask.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/compiler/plugin.proto

\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/source\_context.proto  
\* /opt/cola/permits/1444789790\_1666041710.804059/0/protobuf-java-3-19-6-jar/google/protobuf/api.proto

# 1.258 apache-commons-text 1.10.0

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# 1.259 hibernate-validator 6.2.5.Final

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# 1.260 kpartx 0.4.9-136.el7\_9

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<signature of Ty Coon>, 1 April 1990  
Ty Coon, President of Vice

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## 1.261 schema-registry-serde 1.1.1

### 1.261.1 Available under license :

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*/
-->
```

Found in path(s):

\* /opt/cola/permits/1463017602\_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-jar/META-

INF/maven/software.amazon.glue/schema-registry-serde/pom.xml  
No license file was found, but licenses were detected in source scan.

```
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 */
```

Found in path(s):

```
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializerFactory.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonSerializer.java
*
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/json/JsonDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonValidator.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializationFacade.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerFactory.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/json/JsonDataWithSchema.java
*
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/utills/AVROUtils.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryKafkaDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/avro/AWSKafkaAvroSerializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/avro/AWSKafkaAvroDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializerImpl.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
```

```
jar/com/amazonaws/services/schemaregistry/serializers/avro/AvroSerializer.java
*
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/SerializationDataEncoder.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerDataParser.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/avro/AvroDeserializer.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializationFacade.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/SecondaryDeserializer.java
*
/opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/deserializers/GlueSchemaRegistryDeserializerImpl.java
* /opt/cola/permits/1463017602_1667606503.2021558/0/schema-registry-serde-1-1-1-sources-
jar/com/amazonaws/services/schemaregistry/serializers/GlueSchemaRegistrySerializer.java
```

# 1.262 s3 2.17.85

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```
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-jar/META-INF/services/software.amazon.awssdk.http.async.SdkAsyncHttpService
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```

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```
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
```

```
jar/software/amazon/awssdk/http/crt/AwsCrtSdkHttpService.java
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
jar/software/amazon/awssdk/http/crt/ConnectionHealthChecksConfiguration.java
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* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
jar/software/amazon/awssdk/http/crt/internal/AwsCrtAsyncHttpStreamAdapter.java
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
jar/software/amazon/awssdk/http/crt/internal/CrtRequestExecutor.java
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-
jar/software/amazon/awssdk/http/crt/internal/AwsCrtResponseBodyPublisher.java
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```

Found in path(s):

```
* /opt/cola/permits/1463015931_1667606579.5067983/0/aws-crt-client-2-14-13-preview-sources-1-jar/META-
INF/maven/software.amazon.awssdk/aws-crt-client/pom.xml
```

## 1.269 metrics-spi 2.17.85

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```
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```
* /opt/cola/permits/1463018035_1667607008.204585/0/schema-registry-common-1-1-1-sources-
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jar/com/amazonaws/services/schemaregistry/utils/GlueSchemaRegistryUtils.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryCompressionHandler.java  
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\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryCompressionFactory.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/AWSSchemaRegistryGlueClientRetryPolicyHelper.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryDefaultCompression.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/utils/AvroRecordType.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/utils/AWSSchemaRegistryConstants.java  
\*  
/opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/caching/GlueSchemaRegistryDeserializerCache.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/AWSDeserializerInput.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/caching/GlueSchemaRegistrySerializerCache.java  
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jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryDataFormatSerializer.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/exception/GlueSchemaRegistryIncompatibleDataException.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/AWSDeserializerInput.java  
\*  
/opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/exception/AWSSchemaRegistryException.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/GlueSchemaRegistryDataFormatDeserializer.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/Schema.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/caching/GlueSchemaRegistryCache.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/configs/GlueSchemaRegistryConfiguration.java  
\* /opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/AWSSchemaNamingStrategy.java  
\*  
/opt/cola/permits/1463018035\_1667607008.204585/0/schema-registry-common-1-1-1-sources-  
jar/com/amazonaws/services/schemaregistry/common/AWSSchemaNamingStrategyDefaultImpl.java

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## 1.286 protocol-core 2.17.85

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## 1.287 metrics-health-checks 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.health

Build-Jdk-Spec: 1.8

Bundle-Description: An addition to Metrics which provides the ability to run application-specific health checks, allowing you to check your application's health in production.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Health Checks

Bundle-SymbolicName: io.dropwizard.metrics.healthchecks

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.health;uses:="com.codahale.metrics";version="4.1.33",com.codahale.metrics.health.jvm;uses:="com.codahale.metrics.health,com.codahale.metrics.jvm";version="4.1.33",com.codahale.metrics.health.annotation;version="4.1.33"

Implementation-Title: Metrics Health Checks

Implementation-Version: 4.1.33

Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.codahale.metrics

;version="[4.1,5)",com.codahale.metrics.health,com.codahale.metrics.h  
ealth.annotation,com.codahale.metrics.jvm;version="[4.1,5)";resolutio  
n:=optional  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501796\_1668971429.6280649/0/metrics-healthchecks-4-1-33-jar/META-  
INF/MANIFEST.MF

# 1.288 dropwizard-lifecycle 2.0.34

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# 1.289 metrics-jvm 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jvm

Build-Jdk-Spec: 1.8

Bundle-Description: A set of classes which allow you to monitor critical aspects of your Java Virtual Machine using Metrics.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: JVM Integration for Metrics  
Bundle-SymbolicName: io.dropwizard.metrics.jvm  
Bundle-Version: 4.1.33  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.jvm;uses:="com.codahale.metrics,javax.management";version="4.1.33"  
Implementation-Title: JVM Integration for Metrics  
Implementation-Version: 4.1.33  
Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.sun.management;resolution:=optional,com.codahale.metrics;version="[4.1,5)",javax.management  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501873\_1668971438.6468465/0/metrics-jvm-4-1-33-jar/META-INF/MANIFEST.MF

## 1.290 dropwizard-servlets 2.0.34

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## 1.291 metrics-servlets 4.1.33

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Manifest-Version: 1.0  
Automatic-Module-Name: com.codahale.metrics.servlets  
Build-Jdk-Spec: 1.8  
Bundle-Description: A set of utility servlets for Metrics, allowing you to expose valuable information about your production environment.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: Metrics Utility Servlets  
Bundle-SymbolicName: io.dropwizard.metrics.servlets  
Bundle-Version: 4.1.33  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.servlets;uses:="com.codahale.metrics,com.codahale.metrics.health,com.fasterxml.jackson.databind,javax.servlet,javax.servlet.http";version="4.1.33"

Implementation-Title: Metrics Utility Servlets  
Implementation-Version: 4.1.33  
Import-Package: javax.servlet;version="[2.5.0,4.0.0)",javax.servlet.ht  
tp;version="[2.5.0,4.0.0)",com.codahale.metrics;version="[4.1,5)",com  
.codahale.metrics.health;version="[4.1,5)",com.codahale.metrics.json;  
version="[4.1,5)",com.codahale.metrics.jvm;version="[4.1,5)",com.fast  
erxml.jackson.databind;version="[2.9,3)",com.fasterxml.jackson.databi  
nd.util;version="[2.9,3)",com.papertrail.profiler;version="[1.1,2)"  
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

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\* /opt/cola/permits/1480501845\_1668971417.0605376/0/metrics-servlets-4-1-33-jar/META-INF/MANIFEST.MF

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## 1.293 metrics-jetty 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.jetty9

Build-Jdk-Spec: 1.8

Bundle-Description: A set of extensions for Jetty 9.3 and higher which provide instrumentation of thread pools, connector metrics, and application latency and utilization.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Metrics Integration for Jetty 9.3 and higher

Bundle-SymbolicName: io.dropwizard.metrics.jetty9

Bundle-Version: 4.1.33

Created-By: Apache Maven Bundle Plugin 5.1.8

Export-Package: com.codahale.metrics.jetty9;uses="com.codahale.metrics, javax.servlet, javax.servlet.http, org.eclipse.jetty.io, org.eclipse.jetty.server, org.eclipse.jetty.server.handler, org.eclipse.jetty.util.annotation, org.eclipse.jetty.util.component, org.eclipse.jetty.util.thread";version="4.1.33"

Implementation-Title: Metrics Integration for Jetty 9.3 and higher

Implementation-Version:

4.1.33

Import-Package: javax.servlet;version="[2.5.0,4.0.0)", javax.servlet.http;version="[2.5.0,4.0.0)", com.codahale.metrics;version="[4.1,5)", org.eclipse.jetty.http;version="[9.4,10)", org.eclipse.jetty.io;version="[9.4,10)", org.eclipse.jetty.server;version="[9.4,10)", org.eclipse.jetty.server.handler;version="[9.4,10)", org.eclipse.jetty.util.annotation;version="[9.4,10)", org.eclipse.jetty.util.component;version="[9.4,10)", org.eclipse.jetty.util.thread;version="[9.4,10)"

Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"

Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501782\_1668971450.344051/0/metrics-jetty9-4-1-33-jar/META-INF/MANIFEST.MF

## 1.294 dropwizard-request-logging 2.0.34

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# 1.295 metrics-jmx 4.1.33

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Manifest-Version: 1.0  
Automatic-Module-Name: com.codahale.metrics.jmx  
Build-Jdk-Spec: 1.8  
Bundle-Description: A set of classes which allow you to report metrics  
via JMX.  
Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>  
Bundle-ManifestVersion: 2  
Bundle-Name: Metrics Integration with JMX  
Bundle-SymbolicName: io.dropwizard.metrics.jmx  
Bundle-Version: 4.1.33  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.jmx;uses:="com.codahale.metrics,j  
avax.management";version="4.1.33"  
Implementation-Title: Metrics Integration with JMX  
Implementation-Version: 4.1.33  
Import-Package: org.slf4j;version="[1.6.0,2.0.0)",com.codahale.metrics  
;version="[4.1,5)",javax.management  
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

Found in path(s):

\* /opt/cola/permits/1480501768\_1668971443.6143289/0/metrics-jmx-4-1-33-jar/META-INF/MANIFEST.MF

# 1.296 dropwizard-core 2.0.34

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# 1.297 dropwizard-jetty 2.0.34

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# 1.298 metrics-json 4.1.33

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Manifest-Version: 1.0

Automatic-Module-Name: com.codahale.metrics.json

Build-Jdk-Spec: 1.8

Bundle-Description: A set of Jackson modules which provide serializers  
for most Metrics classes.

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0.html>

Bundle-ManifestVersion: 2

Bundle-Name: Jackson Integration for Metrics

Bundle-SymbolicName: io.dropwizard.metrics.json  
Bundle-Version: 4.1.33  
Created-By: Apache Maven Bundle Plugin 5.1.8  
Export-Package: com.codahale.metrics.json;uses:="com.codahale.metrics,  
com.fasterxml.jackson.core,com.fasterxml.jackson.databind";version="4  
.1.33"  
Implementation-Title: Jackson Integration for Metrics  
Implementation-Version: 4.1.33  
Import-Package: com.codahale.metrics;version="[4.1,5)",com.codahale.me  
trics.health;version="[4.1,5)";resolution:=optional,com.fasterxml.jac  
kson.core;version="[2.9,3)",com.fasterxml.jackson.databind;version="[  
2.9,3)",com.fasterxml.jackson.databind.module;version="[2.9,3)",com.f  
asterxml.jackson.databind.ser;version="[2.9,3)",com.fasterxml.jackson  
.databind.ser.std;version="[2.9,3)"  
Require-Capability: osgi.ee;filter:="(&(osgi.ee=JavaSE)(version=1.8))"  
Tool: Bnd-6.3.1.202206071316

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\* /opt/cola/permits/1480501740\_1668971447.245473/0/metrics-json-4-1-33-jar/META-INF/MANIFEST.MF

# 1.299 jackson-databind 2.14.1

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Jackson is a high-performance, Free/Open Source JSON processing library. It was originally written by Tatu Saloranta (tatu.saloranta@iki.fi), and has been in development since 2007.

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# 1.300 jackson-dataformat-cbor 2.14.1

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cmd/krb5/slave/kpropd_rpc.c
lib/gss_mechs/mech_krb5/et/kdb5_err.c
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lib/libgss/g\_utils.c  
lib/libgss/g\_verify.c  
lib/libgss/gssd\_pname\_to\_uid.c  
uts/common/gssapi/include/gssapi\_err\_generic.h  
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The implementations of GSSAPI mechglue in GSSAPI-SPNEGO in  
"src/lib/gssapi", including the following files:

lib/gssapi/generic/gssapi\_err\_generic.et  
lib/gssapi/mechglue/g\_accept\_sec\_context.c  
lib/gssapi/mechglue/g\_acquire\_cred.c  
lib/gssapi/mechglue/g\_canon\_name.c  
lib/gssapi/mechglue/g\_compare\_name.c  
lib/gssapi/mechglue/g\_context\_time.c  
lib/gssapi/mechglue/g\_delete\_sec\_context.c  
lib/gssapi/mechglue/g\_dsp\_name.c  
lib/gssapi/mechglue/g\_dsp\_status.c  
lib/gssapi/mechglue/g\_dup\_name.c  
lib/gssapi/mechglue/g\_exp\_sec\_context.c  
lib/gssapi/mechglue/g\_export\_name.c  
lib/gssapi/mechglue/g\_glue.c  
lib/gssapi/mechglue/g\_imp\_name.c  
lib/gssapi/mechglue/g\_imp\_sec\_context.c  
lib/gssapi/mechglue/g\_init\_sec\_context.c  
lib/gssapi/mechglue/g\_initialize.c  
lib/gssapi/mechglue/g\_inquire\_context.c  
lib/gssapi/mechglue/g\_inquire\_cred.c  
lib/gssapi/mechglue/g\_inquire\_names.c  
lib/gssapi/mechglue/g\_process\_context.c  
lib/gssapi/mechglue/g\_rel\_buffer.c  
lib/gssapi/mechglue/g\_rel\_cred.c  
lib/gssapi/mechglue/g\_rel\_name.c  
lib/gssapi/mechglue/g\_rel\_oid\_set.c  
lib/gssapi/mechglue/g\_seal.c

lib/gssapi/mechglue/g\_sign.c  
lib/gssapi/mechglue/g\_store\_cred.c  
lib/gssapi/mechglue/g\_unseal.c  
lib/gssapi/mechglue/g\_userok.c  
lib/gssapi/mechglue/g\_utils.c  
lib/gssapi/mechglue/g\_verify.c  
lib/gssapi/mechglue/gssd\_pname\_to\_uid.c  
lib/gssapi/mechglue/mglueP.h  
lib/gssapi/mechglue/oid\_ops.c  
lib/gssapi/spnego/gssapiP\_spnego.h  
lib/gssapi/spnego/spnego\_mech.c

and the initial implementation of incremental propagation, including the following new or changed files:

include/iprop\_hdr.h  
kadmin/server/ipropd\_svc.c  
lib/kdb/iprop.x  
lib/kdb/kdb\_convert.c  
lib/kdb/kdb\_log.c  
lib/kdb/kdb\_log.h  
lib/krb5/error\_tables/kdb5\_err.et  
slave/kpropd\_rpc.c  
slave/kproplog.c

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## 1.302 device-mapper-multipath 0.4.9-136.el7\_9

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## 1.303 krb5-libs 1.15.1-55.el7\_9

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cmd/krb5/iproplib/iproplib_hdr.h
cmd/krb5/kadmin/server/iproplib_svc.c
cmd/krb5/kproplog/kproplog.c
cmd/krb5/slave/kpropd_rpc.c
lib/gss_mechs/mech_krb5/et/kdb5_err.c
lib/gss_mechs/mech_spnego/mech/gssapiP_spnego.h
lib/gss_mechs/mech_spnego/mech/spnego_mech.c
```

lib/krb5/kadm5/kadm\_host\_srv\_names.c  
lib/krb5/kdb/kdb\_convert.c  
lib/krb5/kdb/kdb\_hdr.h  
lib/krb5/kdb/kdb\_log.c  
lib/krb5/kdb/kdb\_log.h  
lib/libgss/g\_accept\_sec\_context.c  
lib/libgss/g\_acquire\_cred.c  
lib/libgss/g\_canon\_name.c  
lib/libgss/g\_compare\_name.c  
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lib/libgss/g\_dsp\_status.c  
lib/libgss/g\_dup\_name.c  
lib/libgss/g\_exp\_sec\_context.c  
lib/libgss/g\_export\_name.c  
lib/libgss/g\_glue.c  
lib/libgss/g\_imp\_name.c  
lib/libgss/g\_imp\_sec\_context.c  
lib/libgss/g\_init\_sec\_context.c  
lib/libgss/g\_initialize.c  
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lib/libgss/g\_utils.c  
lib/libgss/g\_verify.c  
lib/libgss/gssd\_pname\_to\_uid.c  
uts/common/gssapi/include/gssapi\_err\_generic.h  
uts/common/gssapi/include/mechglueP.h

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- lib/gssapi/mechglue/g\_accept\_sec\_context.c
- lib/gssapi/mechglue/g\_acquire\_cred.c
- lib/gssapi/mechglue/g\_canon\_name.c
- lib/gssapi/mechglue/g\_compare\_name.c
- lib/gssapi/mechglue/g\_context\_time.c
- lib/gssapi/mechglue/g\_delete\_sec\_context.c
- lib/gssapi/mechglue/g\_dsp\_name.c
- lib/gssapi/mechglue/g\_dsp\_status.c
- lib/gssapi/mechglue/g\_dup\_name.c
- lib/gssapi/mechglue/g\_exp\_sec\_context.c
- lib/gssapi/mechglue/g\_export\_name.c
- lib/gssapi/mechglue/g\_glue.c
- lib/gssapi/mechglue/g\_imp\_name.c
- lib/gssapi/mechglue/g\_imp\_sec\_context.c
- lib/gssapi/mechglue/g\_init\_sec\_context.c
- lib/gssapi/mechglue/g\_initialize.c
- lib/gssapi/mechglue/g\_inquire\_context.c
- lib/gssapi/mechglue/g\_inquire\_cred.c
- lib/gssapi/mechglue/g\_inquire\_names.c
- lib/gssapi/mechglue/g\_process\_context.c
- lib/gssapi/mechglue/g\_rel\_buffer.c
- lib/gssapi/mechglue/g\_rel\_cred.c
- lib/gssapi/mechglue/g\_rel\_name.c
- lib/gssapi/mechglue/g\_rel\_oid\_set.c
- lib/gssapi/mechglue/g\_seal.c
- lib/gssapi/mechglue/g\_sign.c
- lib/gssapi/mechglue/g\_store\_cred.c
- lib/gssapi/mechglue/g\_unseal.c
- lib/gssapi/mechglue/g\_userok.c
- lib/gssapi/mechglue/g\_utils.c
- lib/gssapi/mechglue/g\_verify.c
- lib/gssapi/mechglue/gssd\_pname\_to\_uid.c
- lib/gssapi/mechglue/mglueP.h
- lib/gssapi/mechglue/oid\_ops.c
- lib/gssapi/spnego/gssapiP\_spnego.h
- lib/gssapi/spnego/spnego\_mech.c

and the initial implementation of incremental propagation, including the following new or changed files:

- include/iprop\_hdr.h
- kadmin/server/ipropd\_svc.c

lib/kdb/iproprop.x  
lib/kdb/kdb\_convert.c  
lib/kdb/kdb\_log.c  
lib/kdb/kdb\_log.h  
lib/krb5/error\_tables/kdb5\_err.et  
slave/kpropd\_rpc.c  
slave/kproplog.c

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Import-Package: sun.misc;resolution:=optional  
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\* org.eclipse.jetty.orbit:javax.security.auth.message

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\* org.eclipse.jetty.orbit:javax.mail.glassfish

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

\* javax.servlet:javax.servlet-api



- \* javax.annotation:javax.annotation-api
- \* javax.transaction:javax.transaction-api
- \* javax.websocket:javax.websocket-api

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#### Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- \* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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#### OW2

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- org.ow2.asm:asm-commons
- org.ow2.asm:asm

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#### Apache

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- org.apache.taglibs:taglibs-standard-spec
- org.apache.taglibs:taglibs-standard-impl

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#### MortBay

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- org.mortbay.jasper:apache-jsp
- org.apache.tomcat:tomcat-jasper
- org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api  
org.apache.tomcat:tomcat-el-api  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-el-api

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Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville. Permission to use, copy, modify and distribute UnixCrypt for non-commercial or commercial purposes and without fee is granted provided that the copyright notice appears in all copies.

# 1.306 websocket-api 9.4.49.v20220914

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Eclipse

The following artifacts are EPL.

\* org.eclipse.jetty.orbit:org.eclipse.jdt.core

The following artifacts are EPL and ASL2.

\* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

\* org.eclipse.jetty.orbit:javax.mail.glassfish

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Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

\* javax.servlet:javax.servlet-api

\* javax.annotation:javax.annotation-api

\* javax.transaction:javax.transaction-api

\* javax.websocket:javax.websocket-api

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Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

\* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

org.ow2.asm:asm-commons  
org.ow2.asm:asm

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Apache

The following artifacts are ASL2 licensed.

org.apache.taglibs:taglibs-standard-spec  
org.apache.taglibs:taglibs-standard-impl

-----  
MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp  
org.apache.tomcat:tomcat-jasper  
org.apache.tomcat:tomcat-juli  
org.apache.tomcat:tomcat-jsp-api  
org.apache.tomcat:tomcat-el-api  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-api  
org.apache.tomcat:tomcat-util-scan  
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el  
org.apache.tomcat:tomcat-jasper-el  
org.apache.tomcat:tomcat-el-api

-----  
Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

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Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

Permission to use, copy, modify and distribute UnixCrypt for non-commercial or commercial purposes and without fee is granted provided that the copyright notice appears in all copies.

## 1.307 protobuf-java 3.21.12

### 1.307.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
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```

Found in path(s):

```
* /opt/cola/permits/1521222018_1672206959.0969713/0/protobuf-java-3-21-12-sources-
jar/com/google/protobuf/Message.java
* /opt/cola/permits/1521222018_1672206959.0969713/0/protobuf-java-3-21-12-sources-
jar/com/google/protobuf/FieldType.java
* /opt/cola/permits/1521222018_1672206959.0969713/0/protobuf-java-3-21-12-sources-
jar/com/google/protobuf/ExtensionSchemas.java
*
/opt/cola/permits/1521222018_1672206959.0969713/0/protobuf-java-3-21-12-sources-
jar/com/google/protobuf/ProtocolMessageEnum.java
* /opt/cola/permits/1521222018_1672206959.0969713/0/protobuf-java-3-21-12-sources-
jar/com/google/protobuf/UnmodifiableLazyStringList.java
* /opt/cola/permits/1521222018_1672206959.0969713/0/protobuf-java-3-21-12-sources-
jar/com/google/protobuf/LazyStringArrayList.java
* /opt/cola/permits/1521222018_1672206959.0969713/0/protobuf-java-3-21-12-sources-
```

jar/com/google/protobuf/Extension.java  
\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-  
jar/com/google/protobuf/CodedOutputStream.java  
\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-  
jar/com/google/protobuf/RopeByteString.java  
\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-  
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jar/com/google/protobuf/CodedOutputStreamWriter.java  
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jar/com/google/protobuf/BufferAllocator.java  
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jar/com/google/protobuf/ProtocolStringList.java  
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jar/com/google/protobuf/BlockingService.java  
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jar/com/google/protobuf/StructuralMessageInfo.java  
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jar/com/google/protobuf/MessageInfoFactory.java  
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jar/com/google/protobuf/ArrayDecoders.java  
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/opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-  
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jar/com/google/protobuf/ManifestSchemaFactory.java  
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jar/com/google/protobuf/IterableByteBufferInputStream.java  
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jar/com/google/protobuf/RawMessageInfo.java  
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jar/com/google/protobuf/GeneratedMessageInfoFactory.java  
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jar/com/google/protobuf/ByteBufferWriter.java  
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jar/com/google/protobuf/SmallSortedMap.java  
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\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/SchemaUtil.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/MessageOrBuilder.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/MapFieldSchemas.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/FloatArrayList.java

\*

/opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/SchemaFactory.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/MapField.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/CanIgnoreReturnValue.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/TextFormatParseLocation.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/MessageLiteToString.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/google/protobuf/struct.proto

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/ByteString.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/ExtensionRegistryLite.java

\*

/opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/ExtensionRegistry.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/CheckReturnValue.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/Protobuf.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/UnknownFieldSetSchema.java

\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/ExtensionSchema.java

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\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/DiscardUnknownFieldsParser.java

\*

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\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/TextFormatEscaper.java  
\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/GeneratedMessageV3.java  
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\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/MapFieldSchema.java  
\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/GeneratedMessage.java  
\* /opt/cola/permits/1521222018\_1672206959.0969713/0/protobuf-java-3-21-12-sources-jar/com/google/protobuf/Descriptors.java

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jar/google/protobuf/field\_mask.proto

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# 1.329 commons-fileupload 1.5

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# 1.330 snake-yaml 2.0

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- \* /opt/cola/permits/1584157893\_1677999786.1262538/0/snakeyaml-2-0-sources-jar/org/yaml/snakeyaml/representer/SafeRepresenter.java
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 *
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 * This class is used to encode and decode data in Base64 format as described in RFC 1521.
 *
 * <p>
 * Project home page: www.
 * source-code.biz/base64coder/java

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```
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## 1.332 zlib 1.2.7-21.el7\_9

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```

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

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## 1.334 hardlink 1.0-19.el7

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# 1.335 pyxattr 0.5.1-5.e17

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These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

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## 1.336 popt 1.13-16.el7

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In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member

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Release from	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2		1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2			
2002	PSF	yes		
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes

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## 1.338 libidn 1.28-4.el7

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the

Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute

the object code for the work under the terms of Section 6.

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For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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# 1.345 libutempter 1.1.6-4.el7

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## 1.346 pkg-config 0.27.1-4.el7

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## 1.348 pygpgme 0.3-9.el7

### 1.348.1 Available under license :

From RPM File Metadata:LGPLv2+

## 1.349 qrencode 3.4.1-3.el7

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.



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# 1.351 libassuan 2.1.0-3.el7

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Version 2.1, February 1999

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## 1.353 gawk 4.0.2-4.e17\_3.1

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# 1.354 libsepol 2.5-10.el7

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Any executables

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## 1.355 texinfo 5.1-5.e17

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Version 3, 29 June 2007

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Written by: Philip Hazel  
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Email domain: freemail.hu

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#### THE C++ WRAPPER FUNCTIONS

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## 1.361 pinentry 0.8.1-17.el7

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## 1.364 libsemanage-common 2.5-14.el7

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Version 2.1, February 1999

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute

the object code for the work under the terms of Section 6.

Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

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b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

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d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is

normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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# 1.366 libcap-ng 0.7.5-4.el7

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or

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## 1.367 pycurl 7.19.0-19.el7

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bzip2/libbzip2 version 1.0.6 of 6 September 2010

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## 1.369 libgpg-error 1.12-3.el7

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When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object

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## 1.370 findutils 4.5.11-6.el7

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Version 3, 29 June 2007

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```
@c Local Variables:
@c ispell-local-pdict: "ispell-dict"
@c End:
```

## 1.371 hostname 3.13-3.el7\_7.1

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Original Protocol Buffers design and implementation:

Sanjay Ghemawat <sanjay@google.com>  
Jeff Dean <jeff@google.com>  
Daniel Dulitz <daniel@google.com>  
Craig Silverstein  
Paul Haahr <haahr@google.com>  
Corey Anderson <corin@google.com>  
(and many others)

Proto2 C++ and Java primary author:

Kenton Varda <kenton@google.com>

Proto2 Python primary authors:

Will Robinson <robinson@google.com>  
Petar Petrov <petar@google.com>

Java Nano primary authors:

Brian Duff <bduff@google.com>  
Tom Chao <chaot@google.com>  
Max Cai <maxtroy@google.com>  
Ulas Kirazci <ulas@google.com>

Large code contributions:

Jason Hsueh <jasonh@google.com>  
Joseph Schorr <jschorr@google.com>  
Wenbo Zhu <wenboz@google.com>

Large quantity of code reviews:

Scott Bruce <sbruce@google.com>  
Frank Yellin  
Neal Norwitz <nnorwitz@google.com>  
Jeffrey Yasskin <jyasskin@google.com>  
Ambrose  
Feinstein <ambrose@google.com>

Documentation:

Lisa Carey <lcarey@google.com>

Maven packaging:

Gregory Kick <gak@google.com>

Patch contributors:

Kevin Ko <kevin.s.ko@gmail.com>

\* Small patch to handle trailing slashes in --proto\_path flag.

Johan Euphrosine <proppy@aminche.com>

\* Small patch to fix Python CallMethod().

Ulrich Kunitz <kune@deine-taler.de>

\* Small optimizations to Python serialization.

Leandro Lucarella <llucax@gmail.com>

\* VI syntax highlighting tweaks.

\* Fix compiler to not make output executable.

Dilip Joseph <dilip.antony.joseph@gmail.com>

\* Heuristic detection of sub-messages when printing unknown fields in text format.

Brian Atkinson <nairb774@gmail.com>

\* Added @Override annotation to generated Java code where appropriate.

Vincent Choinire <Choiniere.Vincent@hydro.qc.ca>

\* Tru64 support.

Monty Taylor <monty.taylor@gmail.com>

\* Solaris 10 + Sun Studio fixes.

Alek Storm <alek.storm@gmail.com>

\* Slicing support for repeated scalar fields for the Python API.

Oleg Smolsky <oleg.smolsky@gmail.com>

\* MS Visual Studio error format option.

\* Detect unordered\_map in stl\_hash.m4.

Brian Olson <brianolson@google.com>

\* gzip/zlib I/O support.

Michael Poole <mdpoole@troilus.org>

\* Fixed warnings about generated constructors not explicitly initializing all fields (only present with certain compiler settings).

\* Added generation of field number constants.

Wink Saville <wink@google.com>

\* Fixed initialization ordering problem in logging code.

Will Pierce <willp@nuclei.com>

\* Small patch improving performance of in Python serialization.

Alexandre Vassalotti <alexandre@peadrop.com>

\* Emacs mode for Protocol Buffers (editors/protobuf-mode.el).

Scott Stafford <scott.stafford@gmail.com>

\* Added Swap(), SwapElements(), and RemoveLast() to Reflection interface.

Alexander Melnikov <alm@sibmail.ru>

\* HPUX support.

Oliver Jowett <oliver.jowett@gmail.com>

- \* Detect whether zlib is new enough in configure script.

- \* Fixes for Solaris 10 32/64-bit confusion.

Evan Jones <evanj@mit.edu>

- \* Optimize Java serialization code when writing a small message to a stream.

- \* Optimize Java serialization of strings so that UTF-8 encoding happens only once per string per serialization call.

- \* Clean up some Java warnings.

- \* Fix bug with permanent callbacks that delete themselves when run.

Michael Kucharski <m.kucharski@gmail.com>

- \* Added CodedInputStream.getTotalBytesRead().

Kacper Kowalik <xarthisius.kk@gmail.com>

- \* Fixed m4/acx\_pthread.m4 problem for some Linux distributions.

William Orr <will@worrbase.com>

- \* Fixed detection of sched\_yield on Solaris.

- \* Added atomicops for Solaris

Andrew Paprocki <andrew@ishiboo.com>

- \* Fixed minor IBM xLC compiler build issues

- \* Added atomicops for AIX (POWER)

Nipunn Koorapati <nipunn1313@gmail.com>

- \* Provide a type alias field ValueType

on EnumTypeWrapper

- \* Match service argument names to abstract interface

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$Id: javaee-api.bnd 12591 2008-01-17 09:53:29Z durieuxp $

Exclude javax.servlet.*
Import-Package !javax.servlet.*,\n !com.sun.org.apache.*,\n javax.xml.namespace,\n *

Include-Resource @geronimo-activation_1.0.2_spec-1.2.jar!/META-INF/mimetypes.default

FIXME Some classes in javax.* depends on 'external' packages
Introduced packages versions
Export-Package javax.el.*;version=2.1,\
```



```
javax.servlet.*;version=2.5;-split-package:=merge-first,\
javax.transaction;version=1.1.0,\
javax.mail.*;version=1.4,\
javax.*,\
org.apache.taglibs.*;version=2.1
```

```
Private-Package org.apache.geronimo.*;-split-package:=merge-first,\
javax.xml.namespace;-split-package:=merge-first,\
com.ibm.*
```

-failok

Found in path(s):

\* /opt/cola/permits/1610265837\_1679512518.7665615/0/javaee-api-5-0-1-sources-jar/META-INF/javaee-api.bnd

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\* /opt/cola/permits/1611898203\_1680235707.0150697/0/everit-json-schema-1-12-2-sources-4-jar/META-  
INF/maven/com.github.erosb/everit-json-schema/pom.xml

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\* /opt/cola/permits/1611898203\_1680235707.0150697/0/everit-json-schema-1-12-2-sources-4-jar/org/everit/json/schema/JSONPointerException.java

\* /opt/cola/permits/1611898203\_1680235707.0150697/0/everit-json-schema-1-12-2-sources-4-jar/org/everit/json/schema/JSONPointer.java

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\* /opt/cola/permits/1611898203\_1680235707.0150697/0/everit-json-schema-1-12-2-sources-4-jar/org/everit/json/schema/internal/JSONWriter.java

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Found in path(s):

```
*/opt/cola/permits/1636752241_1681746198.4137597/0/jest-common-0-1-1-sources-1-
jar/io/searchbox/client/util/PaddedAtomicInteger.java
```

## 1.383 amazon-kinesis-producer 0.14.9

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# 1.385 amazon-kinesis-client 1.7.0

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```
* /opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-jar/io/perfmark/Impl.java
* /opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-
jar/io/perfmark/PerfMark.java
* /opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-jar/io/perfmark/package-
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* /opt/cola/permits/1656707133_1682600610.4687467/0/perfmark-api-0-17-0-sources-1-jar/io/perfmark/Tag.java
```

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```
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/OnDealloc.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/J2ObjCIncompatible.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/LoopTranslation.java
*
/opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/RetainedLocalRef.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/ReflectionSupport.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/Property.java
```



```
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/WeakOuter.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/RetainedWith.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
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```
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jar/com/google/j2objc/annotations/Weak.java
* /opt/cola/permits/1704412778_1685746927.655543/0/j2objc-annotations-2-8-sources-
jar/com/google/j2objc/annotations/AutoreleasePool.java
```

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When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

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0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.



Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function

must

be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition,

mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the

Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a

medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

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#### END OF TERMS AND CONDITIONS

#### Appendix: How to Apply These Terms to Your New Libraries

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To apply these terms, attach the following notices to the library. It is

safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

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Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

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<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

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@subheading Preamble

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To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## @subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

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You must

cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

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its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

@end enumerate

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of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

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@item

You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

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However, linking a ``work that uses the Library'' with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a ``work that uses the library''. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6.

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The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while

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If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to

distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the

copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on

the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

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#### END OF TERMS AND CONDITIONS

##### Appendix: How to Apply These Terms to Your New Libraries

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To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>

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<signature of Ty Coon>, 1 April 1990

Ty Coon, President of Vice

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@subheading Preamble

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Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

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We call this license the `Lesser` General Public License because it does *Less* to protect the user's freedom than the ordinary General Public License. It also provides other free software developers *Less* of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

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In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU

operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a ``work based on the library" and a ``work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

## @subheading TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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@item

This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called ``this License"). Each licensee is addressed as ``you".

A ``library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The ``Library", below, refers to any such software library or work which has been distributed under these terms. A ``work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term ``modification".)

``Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

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@item

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The modified work must itself be a software library.

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You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

@item

You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

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If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)  
@end enumerate

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

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Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

@item

You may copy and distribute the Library (or a portion or

derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

@item

A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a ``work that uses the Library''. Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a ``work that uses the Library'' with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a ``work that uses the library''. The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a ``work that uses the Library'' uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable ``work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

@item

Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

@item

Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

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from a designated place, offer equivalent access to copy the above specified materials from the same place.

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Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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@end enumerate

@subheading END OF TERMS AND CONDITIONS

@page

@subheading How to Apply These Terms to Your New Libraries

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@smallexample

@var{one line to give the library's name and an idea of what it does.}

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## 1.419 snappy 0.3

## 1.419.1 Available under license :

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Found in path(s):

- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Memory.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/SnappyCompressor.java
- \*
- /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Main.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/UnsafeMemory.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/SnappyDecompressor.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/SnappyInternalUtils.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/CorruptionException.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Snappy.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/SlowMemory.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/SnappyInputStream.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/Crc32C.java
- \*
- /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/SnappyOutputStream.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/BufferRecycler.java
- \* /opt/cola/permits/1722433605\_1686901730.8528392/0/snappy-0-3-sources-3-jar/org/iq80/snappy/HadoopSnappyCodec.java

# 1.420 aws-crt 0.22.1

## 1.420.1 Available under license :

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```
/**
```

```
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```
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```

```
*/
```

Found in path(s):

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/Http2ConnectionSetting.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HttpStreamBase.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/Http2Stream.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/auth/signing/AwsSigningConfig.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt/QualityOfService.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt5/OnConnectionSuccessReturn.java
```

```
*
```

```
/opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/auth/credentials/CachedCredentialsProvider.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/auth/credentials/DefaultChainCredentialsProvider.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/s3/ChecksumConfig.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HTTPHeader.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/auth/credentials/ProfileCredentialsProvider.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/s3/ResumeToken.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/Http2ConnectionSettingListBuilder.java
```

```
*
```

```
/opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt/MqttMessage.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/s3/S3FinishedResponseContext.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/auth/credentials/CognitoCredentialsProvider.java
```

```
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
```

```

jar/software/amazon/awssdk/crt/AsyncCallback.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/mqtt5/Mqtt5WebsocketHandshakeTransformArgs.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/s3/S3MetaRequestOptions.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/mqtt5/Mqtt5Client.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/mqtt5/OnConnectionFailureReturn.java
*
/opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/s3/S3ClientOptions.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/http/HttpClientConnectionManagerOptions.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/TlsCipherPreference.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/http/HttpClientConnectionManager.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/http/HttpStreamResponseHandlerNativeAdapter.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/http/HttpProxyEnvironmentVariableSetting.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/mqtt5/packets/ConnectPacket.java
*
/opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/TlsContextOptions.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/TlsContext.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/mqtt5/packets/SubscribePacket.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/auth/credentials/StsWebIdentityCredentialsProvider.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/Uri.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/mqtt5/packets/PubAckPacket.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/auth/credentials/EcsCredentialsProvider.java
*
/opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/auth/credentials/StaticCredentialsProvider.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/http/HttpClientConnection.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/http/Http2Request.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/s3/S3MetaRequest.java

```

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/s3/S3Client.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/http/Http2ClientConnection.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/http/HttpRequest.java  
 \*  
 /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/auth/signing/AwsSigner.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/CrtResource.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/http/HttpStreamBaseResponseHandler.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/http/HttpProxyOptions.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/Process.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/s3/S3MetaRequestResponseHandler.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/auth/credentials/StsCredentialsProvider.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/mqtt5/Mqtt5ClientOperationStatistics.java  
 \*  
 /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/io/TlsHashAlgorithm.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/mqtt/MqttClientConnectionEvents.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/mqtt/WebsocketHandshakeTransformArgs.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/s3/S3MetaRequestProgress.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/Log.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/auth/credentials/CredentialsProvider.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/io/HostResolver.java  
 \*  
 /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/CrtPlatform.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/mqtt5/packets/DisconnectPacket.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/mqtt5/packets/PublishPacket.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
 jar/software/amazon/awssdk/crt/mqtt5/packets/UnsubAckPacket.java  
 \* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-

jar/software/amazon/awssdk/crt/io/TlsContextCustomKeyOperationOptions.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt/MqttException.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/auth/credentials/X509CredentialsProvider.java  
\*  
/opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/CrtRuntimeException.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/checksums/CRC32.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt/MqttClientConnection.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt5/Mqtt5ClientOptions.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/s3/ChecksumAlgorithm.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt5/packages/UnsubscribePacket.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt/MqttConnectionConfig.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt5/NegotiatedSettings.java  
\*  
/opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/auth/credentials/DelegateCredentialsHandler.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/utils/PackageInfo.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/utils/PemUtils.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt5/QOS.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt5/packages/UserProperty.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/io/TlsConnectionOptions.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/io/ClientTlsContext.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt5/PublishReturn.java  
\*  
/opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/s3/S3MetaRequestResponseHandlerNativeAdapter.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/SystemInfo.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/io/TlsSignatureAlgorithm.java  
\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-  
jar/software/amazon/awssdk/crt/mqtt5/OnDisconnectionReturn.java



\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt5/OnStoppedReturn.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HttpResponseHandler.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/auth/credentials/Credentials.java

\*

/opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt5/packets/ConnAckPacket.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/auth/credentials/DelegateCredentialsProvider.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HttpException.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HttpRequestBodyStream.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/io/EventLoopGroup.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/utils/ByteBufferUtils.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HttpVersion.java

\*

/opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt/MqttClient.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/CRT.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt5/packets/SubAckPacket.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/s3/CrtS3RuntimeException.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/io/Pkcs11Lib.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/mqtt5/PublishResult.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HTTPHeaderBlock.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/io/ServerTlsContext.java

\*

/opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/io/ExponentialBackoffRetryOptions.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/io/TlsKeyOperationHandler.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/io/TlsKeyOperation.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-jar/software/amazon/awssdk/crt/http/HttpMonitoringOptions.java

\* /opt/cola/permits/1725733162\_1687422525.321919/0/aws-crt-0-22-1-sources-

```

jar/software/amazon/awssdk/crt/http/HttpStream.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/StandardRetryOptions.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/TlsContextPkcs11Options.java
*
/opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/checksums/CRC32C.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/ClientBootstrap.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/io/SocketOptions.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/mqtt5/OnAttemptingConnectReturn.java
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* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/cal/EccKeyPair.java
* /opt/cola/permits/1725733162_1687422525.321919/0/aws-crt-0-22-1-sources-
jar/software/amazon/awssdk/crt/auth/signing/AwsSigningUtils.java

```

## 1.421 python 2.7.5-93.e17\_9

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#### A. HISTORY OF THE SOFTWARE

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Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see <http://www.cwi.nl>) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see <http://www.cnri.reston.va.us>) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see <http://www.zope.com>). In 2001, the Python Software Foundation (PSF, see <http://www.python.org/psf/>) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see <http://www.opensource.org> for the Open Source Definition). Historically, most, but not all, Python

releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derived from	Year	Owner	GPL-compatible? (1)
0.9.0 thru 1.2	1.2	1991-1995	CWI	yes
1.3 thru 1.5.2	1.2	1995-1999	CNRI	yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen.com	no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6.1	2001	PSF	no
2.0.1	2.0+1.6.1	2001	PSF	yes
2.1.1	2.1+2.0.1	2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3				
2.1.2	2002	PSF	yes	
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2003	PSF	yes
2.3.1	2.3	2002-2003	PSF	yes
2.3.2	2.3.1	2002-2003	PSF	yes
2.3.3	2.3.2	2002-2003	PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
2.7	2.6	2010	PSF	yes

Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute

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- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

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```

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```
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Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
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it
under certain conditions; type `show c' for details.
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```
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`Gnomovision' (which makes passes at compilers) written by James Hacker.
```

```
<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

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# 1.425 aws-java-sdk 1.12.436

## 1.425.1 Available under license :

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# 1.426 jmespath-java 1.12.436

## 1.426.1 Available under license :

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<name>Apache License, Version 2.0</name>

Found in path(s):

\* /opt/cola/permits/1738292278\_1688641089.2517529/0/jmespath-java-1-12-436-jar/META-INF/maven/com.amazonaws/jmespath-java/pom.xml

# 1.427 awsjavasdk 1.12.436

## 1.427.1 Available under license :

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# 1.428 libpkit 0.23.5-3.el7

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## 1.429 kotlin 1.8.0

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ntent":["(function
 (root, factory) {\n if (typeof define === 'function' && define.amd) {\n define('kotlin', ['exports'], factory);\n }\n else if (typeof exports === 'object') {\n factory(module.exports);\n }\n else {\n root.kotlin = {};\n factory(root.kotlin);\n }\n}(this, function (Kotlin) {\n var _ = Kotlin;\n\n insertContent();\n});\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.isArray = function (a) {\n return (Array.isArray(a) || a instanceof Int8Array) && a.$type$ === \"BooleanArray\";\n};\nKotlin.isByteArray = function (a) {\n return a instanceof Int8Array && a.$type$!== \"BooleanArray\";\n};\nKotlin.isShortArray = function (a) {\n return a instanceof Int16Array;\n};\nKotlin.isCharArray = function (a) {\n return a instanceof Uint16Array && a.$type$ === \"CharArray\";\n};\nKotlin.isIntArray = function (a) {\n return a instanceof Int32Array;\n};\nKotlin.isFloatArray = function (a) {\n return a instanceof Float32Array;\n};\nKotlin.isDoubleArray = function (a) {\n return a instanceof Float64Array;\n};\nKotlin.isLongArray = function (a) {\n return Array.isArray(a) && a.$type$ === \"LongArray\";\n};\nKotlin.isArray = function (a) {\n return Array.isArray(a) && !a.$type$;\n};\nKotlin.isArrayish = function (a) {\n return Array.isArray(a) || ArrayBuffer.isView(a);\n};\nKotlin.arrayToString = function (a) {\n if (a === null) return \"null\";\n var toString = Kotlin.isCharArray(a) ? String.fromCharCode : Kotlin.toString;\n\n return \"[\" + Array.prototype.map.call(a, function(e) { return toString(e); }).join(\", \") + \"]\";\n};\nKotlin.arrayDeepToString = function (arr) {\n return Kotlin.kotlin.collections.contentDeepToStringImpl(arr);\n};\nKotlin.arrayEquals = function (a, b) {\n if (a === b) {\n return true;\n }\n if (a === null || b === null || !Kotlin.isArrayish(b) || a.length !== b.length) {\n return false;\n }\n for (var i = 0, n = a.length; i < n; i++) {\n if (!Kotlin.equals(a[i], b[i])) {\n return false;\n }\n }\n return true;\n};\nKotlin.arrayDeepEquals = function (a, b) {\n return Kotlin.kotlin.collections.contentDeepEqualsImpl(a, b);\n};\nKotlin.arrayHashCode = function (arr) {\n if (arr === null) return 0;\n var result = 1;\n for (var i = 0, n = arr.length; i < n; i++) {\n result = ((31 * result | 0) + Kotlin.hashCode(arr[i])) | 0;\n }\n return result;\n};\nKotlin.arrayDeepHashCode = function (arr) {\n return Kotlin.kotlin.collections.contentDeepHashCodeImpl(arr);\n};\nKotlin.primitiveArraySort = function (array) {\n array.sort(Kotlin.doubleCompareTo);\n};\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.getCallableRef = function(name, f) {\n f.callableName = name;\n return f;\n};\nKotlin.getPropertyCallableRef = function(name, paramCount, getter, setter) {\n getter.get = getter;\n getter.set = setter;\n getter.callableName = name;\n return getPropertyRefClass(getter, setter, propertyRefClassMetadataCache[paramCount]);\n};\nfunction getPropertyRefClass(obj, setter, cache) {\n obj.$metadata$ = getPropertyRefMetadata(typeof setter === \"function\" ? cache.mutable : cache.immutable);\n obj.constructor = obj;\n return obj;\n}\nvar propertyRefClassMetadataCache = [\n {\n mutable: { value: null, implementedInterface: function () {\n return Kotlin.kotlin.reflect.KMutableProperty0 }\n },\n immutable: { value: null, implementedInterface: function () {\n return Kotlin.kotlin.reflect.KProperty0 }\n }\n },\n {\n mutable: { value: null, implementedInterface: function () {\n return Kotlin.kotlin.reflect.KMutableProperty1 }\n },\n immutable: { value: null, implementedInterface: function () {\n return Kotlin.kotlin.reflect.KProperty1 }\n }\n }\n];\nfunction getPropertyRefMetadata(cache) {\n if (cache.value === null) {\n cache.value = {\n interfaces: [cache.implementedInterface()],\n baseClass: null,\n functions: {},\n properties: {},\n types: {},\n staticMembers: {};\n };\n }\n return cache.value;\n};\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.toShort = function (a) {\n return (a &

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0xFFFF) << 16 >> 16;\n};\n\nKotlin.toByteArray = function (a) {\n return (a & 0xFF) << 24 >>
24;\n};\n\nKotlin.toChar = function (a) {\n return a & 0xFFFF;\n};\n\nKotlin.numberToLong = function (a) {\n
return a instanceof Kotlin.Long ? a : Kotlin.Long.fromNumber(a);\n};\n\nKotlin.numberToInt = function (a) {\n
return a instanceof Kotlin.Long ? a.toInt() : Kotlin.doubleToInt(a);\n};\n\nKotlin.numberToShort = function (a) {\n
return Kotlin.toShort(Kotlin.numberToInt(a));\n};\n\nKotlin.numberToByte = function (a) {\n return
Kotlin.toByte(Kotlin.numberToInt(a));\n};\n\nKotlin.numberToDouble = function (a) {\n return
+a;\n};\n\nKotlin.numberToChar = function (a) {\n return
Kotlin.toChar(Kotlin.numberToInt(a));\n};\n\nKotlin.doubleToInt = function(a)
{\n if (a > 2147483647) return 2147483647;\n if (a < -2147483648) return -2147483648;\n return a |
0;\n};\n\nKotlin.toBoxedChar = function (a) {\n if (a == null) return a;\n if (a instanceof Kotlin.BoxedChar)
return a;\n return new Kotlin.BoxedChar(a);\n};\n\nKotlin.unboxChar = function(a) {\n if (a == null) return a;\n
return Kotlin.toChar(a);\n};\n";\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\nKotlin.equals = function (obj1, obj2) {\n if (obj1 == null) {\n return obj2 ==
null;\n }\n if (obj2 == null) {\n return false;\n }\n if (obj1 !== obj2) {\n return obj2 !== obj2;\n
}\n if (typeof obj1 === "object" && typeof obj1.equals === "function") {\n return obj1.equals(obj2);\n
}\n if (typeof obj1 === "number" && typeof obj2 ===
"number") {\n return obj1 === obj2 && (obj1 !== 0 || 1 / obj1 === 1 / obj2);\n }\n return obj1 ===
obj2;\n};\n\nKotlin.hashCode = function (obj) {\n if (obj == null) {\n return 0;\n }\n var objType = typeof
obj;\n if ("object" === objType) {\n return "function" === typeof obj.hashCode ? obj.hashCode() :
getObjectHashCode(obj);\n }\n if ("function" === objType) {\n return getObjectHashCode(obj);\n }\n
if ("number" === objType) {\n return Kotlin.numberHashCode(obj);\n }\n if ("boolean" === objType)
{\n return Number(obj);\n }\n var str = String(obj);\n return
getStringHashCode(str);\n};\n\nKotlin.toString = function (o) {\n if (o == null) {\n return "null";\n }\n
else if (Kotlin.isArrayish(o)) {\n return "[...]";\n }\n else {\n return o.toString();\n }\n};\n\n/**
@const *\nvar POW_2_32 = 4294967296;\n// TODO: consider switching to Symbol type
once we are on ES6.\n/** @const *\nvar OBJECT_HASH_CODE_PROPERTY_NAME =
"KotlinHashCodeValue$";\n\nfunction getObjectHashCode(obj) {\n if
(!(OBJECT_HASH_CODE_PROPERTY_NAME in obj)) {\n var hash = (Math.random() * POW_2_32) | 0; //
Make 32-bit signed integer.\n Object.defineProperty(obj, OBJECT_HASH_CODE_PROPERTY_NAME, {\n
value: hash, enumerable: false });\n }\n return
obj[OBJECT_HASH_CODE_PROPERTY_NAME];\n}\n\nfunction getStringHashCode(str) {\n var hash = 0;\n
for (var i = 0; i < str.length; i++) {\n var code = str.charCodeAt(i);\n hash = (hash * 31 + code) | 0; // Keep
it 32-bit.\n }\n return hash;\n}\n\nKotlin.identityHashCode = getObjectHashCode;\n";\n\n/*\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed by
the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// Copyright 2009 The Closure
Library Authors. All Rights Reserved.\n\n//
Licensed under the Apache License, Version 2.0 (the "License");\n// you may not use this file except in
compliance with the License.\n// You may obtain a copy of the License at\n\n//
http://www.apache.org/licenses/LICENSE-2.0\n\n// Unless required by applicable law or agreed to in writing,
software\n// distributed under the License is distributed on an "AS-IS" BASIS,\n// WITHOUT WARRANTIES OR
CONDITIONS OF ANY KIND, either express or implied.\n\n/**\n * Constructs a 64-bit two's-complement integer,
given its low and high 32-bit\n * values as *signed* integers. See the from* functions below for more\n *
convenient ways of constructing Longs.\n * \n * The internal representation of a long is the two given signed, 32-bit
values.\n * We use 32-bit pieces because these are the size of integers on which\n * Javascript performs bit-
operations. For operations like addition and\n * multiplication, we split each number into 16-bit pieces, which can
easily be\n * multiplied

```

within Javascript's floating-point representation without overflow or change in sign. In the algorithms below, we frequently reduce the negative case to the positive case by negating the input(s) and then post-processing the result. Note that we must ALWAYS check specially whether those values are MIN\_VALUE (-2<sup>63</sup>) because -MIN\_VALUE == MIN\_VALUE (since 2<sup>63</sup> cannot be represented as a positive number, it overflows back into a negative). Not handling this case would often result in infinite recursion.

```

@param {number} low The low (signed) 32 bits of the long.
@param {number} high The high (signed) 32 bits of the long.
*/
@constructor
@final
*/
Kotlin.Long = function(low, high) {
 /**
 * @type {number}
 * @private
 */
 this.low_ = low | 0; // force into 32 signed bits.
 /**
 * @type {number}
 * @private
 */
 this.high_ = high | 0; // force into 32 signed bits.
};
Kotlin.Long.$metadata$ = {
 kind:
 "class",
 simpleName: "Long",
 interfaces: []
};
// NOTE: Common constant values ZERO, ONE,
NEG_ONE, etc. are defined below the
// from* methods on which they depend.
/**
 * A cache of the Long
representations of small integer values.
 * @type {!Object}
 * @private
 */
Kotlin.Long.IntCache_ =
{};
/**
 * Returns a Long representing the given (32-bit) integer value.
 * @param {number} value The 32-bit
integer in question.
 * @return {!Kotlin.Long} The corresponding Long value.
 */
Kotlin.Long.fromInt =
function(value) {
 if (-128 <= value && value < 128) {
 var cachedObj = Kotlin.Long.IntCache_[value];
 if (cachedObj) {
 return cachedObj;
 }
 var obj = new Kotlin.Long(value | 0, value < 0 ? -1 : 0);
 if (-128 <= value && value < 128) {
 Kotlin.Long.IntCache_[value] = obj;
 }
 return obj;
 };
};
/**
 * Converts this number value to `Long`. The fractional part, if any, is rounded down towards zero. Returns zero if this `Double` value is `NaN`, `Long.MIN_VALUE` if it's less than `Long.MIN_VALUE`, `Long.MAX_VALUE` if it's bigger than `Long.MAX_VALUE`.
 * @param {number} value The number in
question.
 * @return {!Kotlin.Long} The corresponding Long value.
 */
Kotlin.Long.fromNumber =
function(value) {
 if (isNaN(value)) {
 return Kotlin.Long.ZERO;
 } else if (value <= -Kotlin.Long.TWO_PWR_63_DBL_) {
 return Kotlin.Long.MIN_VALUE;
 } else if (value + 1 >= Kotlin.Long.TWO_PWR_63_DBL_) {
 return Kotlin.Long.MAX_VALUE;
 } else if (value < 0) {
 return Kotlin.Long.fromNumber(-value).negate();
 } else {
 return new Kotlin.Long(
 (value % Kotlin.Long.TWO_PWR_32_DBL_) | 0,
 (value / Kotlin.Long.TWO_PWR_32_DBL_) | 0);
 };
};
/**
 * Returns a Long representing the 64-bit integer that comes by concatenating the given high and low bits. Each is assumed to use 32 bits.
 * @param {number} lowBits The low 32-bits.
 * @param {number} highBits The high 32-bits.
 * @return {!Kotlin.Long} The corresponding Long value.
 */
Kotlin.Long.fromBits =
function(lowBits, highBits) {
 return new Kotlin.Long(lowBits, highBits);
};
/**
 * Returns a Long representation of the given string, written using the given radix.
 * @param {string} str The textual
representation of the Long.
 * @param {number=} opt_radix The radix in which the text is written.
 * @return
{!Kotlin.Long} The corresponding Long value.
 */
Kotlin.Long.fromString =
function(str, opt_radix) {
 if (str.length == 0) {
 throw Error('number format error: empty string');
 }
 var radix = opt_radix || 10;
 if (radix < 2 || 36 < radix) {
 throw Error('radix out of range: ' + radix);
 }
 if (str.charAt(0) == '-') {
 return Kotlin.Long.fromString(str.substring(1), radix).negate();
 } else if (str.indexOf('-') >= 0) {
 throw Error('number
format error: interior "-" character: ' + str);
 }
 // Do several (8) digits
each time through the loop, so as to
// minimize the calls to the very expensive emulated div.
var
radixToPower = Kotlin.Long.fromNumber(Math.pow(radix, 8));
var result = Kotlin.Long.ZERO;
for (var i = 0; i < str.length; i += 8) {
 var size = Math.min(8, str.length - i);
 var value = parseInt(str.substring(i, i + size),
radix);
 if (size < 8) {
 var power = Kotlin.Long.fromNumber(Math.pow(radix, size));
 result =
result.multiply(power).add(Kotlin.Long.fromNumber(value));
 } else {
 result =
result.multiply(radixToPower).add(Kotlin.Long.fromNumber(value));
 }
}
return
result;
};
// NOTE: the compiler should inline these constant values below and then remove
// these
variables, so there should be no runtime penalty for these.
/**
 * Number used repeated below in calculations. This must appear before the first call to any from* function below.
 */
Kotlin.Long.TWO_PWR_16_DBL_

```

```

= 1 << 16;\n\n/**\n * @type {number}\n * @private\n */\nKotlin.Long.TWO_PWR_24_DBL_ = 1 <<
24;\n\n/**\n * @type {number}\n * @private\n */\nKotlin.Long.TWO_PWR_32_DBL_ =\nKotlin.Long.TWO_PWR_16_DBL_ * Kotlin.Long.TWO_PWR_16_DBL_;\n\n/**\n * @type {number}\n *
@private\n */\nKotlin.Long.TWO_PWR_31_DBL_ =\n Kotlin.Long.TWO_PWR_32_DBL_ / 2;\n\n/**\n *
@type {number}\n * @private\n */\nKotlin.Long.TWO_PWR_48_DBL_ =\n Kotlin.Long.TWO_PWR_32_DBL_
* Kotlin.Long.TWO_PWR_16_DBL_;\n\n/**\n * @type {number}\n * @private\n
*/\nKotlin.Long.TWO_PWR_64_DBL_ =\n Kotlin.Long.TWO_PWR_32_DBL_ *
Kotlin.Long.TWO_PWR_32_DBL_;\n\n/**\n * @type {number}\n * @private\n
*/\nKotlin.Long.TWO_PWR_63_DBL_ =\n Kotlin.Long.TWO_PWR_64_DBL_ / 2;\n\n/** @type
{!Kotlin.Long} */\nKotlin.Long.ZERO = Kotlin.Long.fromInt(0);\n\n/** @type {!Kotlin.Long}
*/\nKotlin.Long.ONE = Kotlin.Long.fromInt(1);\n\n/** @type {!Kotlin.Long} */\nKotlin.Long.NEG_ONE =
Kotlin.Long.fromInt(-1);\n\n/**
@type {!Kotlin.Long} */\nKotlin.Long.MAX_VALUE =\n Kotlin.Long.fromBits(0xFFFFFFFF | 0, 0x7FFFFFFF
| 0);\n\n/** @type {!Kotlin.Long} */\nKotlin.Long.MIN_VALUE = Kotlin.Long.fromBits(0, 0x80000000 |
0);\n\n/**\n * @type {!Kotlin.Long}\n */\n * @private\n */\nKotlin.Long.TWO_PWR_24_ = Kotlin.Long.fromInt(1
<< 24);\n\n/** @return {number} The value, assuming it is a 32-bit integer. */\nKotlin.Long.prototype.toInt =
function() {\n return this.low_;\n};\n\n/** @return {number} The closest floating-point representation to this
value. */\nKotlin.Long.prototype.toNumber = function() {\n return this.high_ *
Kotlin.Long.TWO_PWR_32_DBL_ +\n this.getLowBitsUnsigned();\n};\n\n/** @return {number} The 32-bit
hashCode of this value. */\nKotlin.Long.prototype.hashCode = function() {\n return this.high_ ^
this.low_;\n};\n\n/**\n * @param {number=} opt_radix The radix in which the text should be written.\n *
@return
{string} The textual representation of this value.\n */\n * @override\n */\nKotlin.Long.prototype.toString = function(opt_radix) {\n var radix = opt_radix || 10;\n if (radix <
2 || 36 < radix) {\n throw Error('radix out of range: ' + radix);\n }\n\n if (this.isZero()) {\n return '0';\n }\n\n if
(this.isNegative()) {\n if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n // We need to change the Long
value before it can be negated, so we remove\n // the bottom-most digit in this base and then recurse to do the
rest.\n var radixLong = Kotlin.Long.fromNumber(radix);\n var div = this.div(radixLong);\n var rem =
div.multiply(radixLong).subtract(this);\n return div.toString(radix) + rem.toInt().toString(radix);\n } else {\n
return '-' + this.negate().toString(radix);\n }\n }\n\n // Do several (5) digits each time through the loop, so as to\n
// minimize the calls to the very expensive emulated div.\n var radixToPower =
Kotlin.Long.fromNumber(Math.pow(radix, 5));\n\n var rem = this;\n var result
= '';\n while (true) {\n var remDiv = rem.div(radixToPower);\n var intVal =
rem.subtract(remDiv.multiply(radixToPower)).toInt();\n var digits = intVal.toString(radix);\n\n rem = remDiv;\n
if (rem.isZero()) {\n return digits + result;\n } else {\n while (digits.length < 5) {\n digits = '0' +
digits;\n }\n result = '' + digits + result;\n }\n }\n};\n\n/** @return {number} The high 32-bits as a signed
value. */\nKotlin.Long.prototype.getHighBits = function() {\n return this.high_;\n};\n\n/** @return {number}
The low 32-bits as a signed value. */\nKotlin.Long.prototype.getLowBits = function() {\n return
this.low_;\n};\n\n/** @return {number} The low 32-bits as an unsigned value.
*/\nKotlin.Long.prototype.getLowBitsUnsigned = function() {\n return (this.low_ >= 0) ?\n this.low_ :
Kotlin.Long.TWO_PWR_32_DBL_ + this.low_;\n};\n\n/**\n * @return {number} Returns the number of bits
needed to represent the absolute\n * value
of this Long.\n */\nKotlin.Long.prototype.getNumBitsAbs = function() {\n if (this.isNegative()) {\n if
(this.equalsLong(Kotlin.Long.MIN_VALUE)) {\n return 64;\n } else {\n return
this.negate().getNumBitsAbs();\n }\n } else {\n var val = this.high_ != 0 ? this.high_ : this.low_;\n for (var bit
= 31; bit > 0; bit--) {\n if ((val & (1 << bit)) != 0) {\n break;\n }\n }\n return this.high_ != 0 ? bit + 33
: bit + 1;\n }\n};\n\n/** @return {boolean} Whether this value is zero. */\nKotlin.Long.prototype.isZero =
function() {\n return this.high_ == 0 && this.low_ == 0;\n};\n\n/** @return {boolean} Whether this value is
negative. */\nKotlin.Long.prototype.isNegative = function() {\n return this.high_ < 0;\n};\n\n/** @return

```

```

{boolean} Whether this value is odd.
*^ Kotlin.Long.prototype.isOdd = function() {
 return (this.low_ & 1) == 1;
};
\n\n/**
 * @param {Kotlin.Long} other Long to compare against.
 * @return {boolean} Whether this Long equals the other.
 */
*^ Kotlin.Long.prototype.equalsLong = function(other) {
 return (this.high_ == other.high_) && (this.low_ == other.low_);
};
\n\n/**
 * @param {Kotlin.Long} other Long to compare against.
 * @return {boolean} Whether this Long does not equal the other.
 */
*^ Kotlin.Long.prototype.notEqualsLong = function(other) {
 return (this.high_ != other.high_) || (this.low_ != other.low_);
};
\n\n/**
 * @param {Kotlin.Long} other Long to compare against.
 * @return {boolean} Whether this Long is less than the other.
 */
*^ Kotlin.Long.prototype.lessThan = function(other) {
 return this.compare(other) < 0;
};
\n\n/**
 * @param {Kotlin.Long} other Long to compare against.
 * @return {boolean} Whether this Long is less than or equal to the other.
 */
*^ Kotlin.Long.prototype.lessThanOrEqual = function(other) {
 return this.compare(other) <= 0;
};
\n\n/**
 * @param {Kotlin.Long} other Long to compare against.
 * @return {boolean} Whether this Long is greater than the other.
 */
*^ Kotlin.Long.prototype.greaterThan = function(other) {
 return this.compare(other) > 0;
};
\n\n/**
 * @param {Kotlin.Long} other Long to compare against.
 * @return {boolean} Whether this Long is greater than or equal to the other.
 */
*^ Kotlin.Long.prototype.greaterThanOrEqual = function(other) {
 return this.compare(other) >= 0;
};
\n\n/**
 * @param {Kotlin.Long} other Long to compare against.
 * @return {number} 0 if they are the same, 1 if the this is greater, and -1 if the given one is greater.
 */
*^ Kotlin.Long.prototype.compare = function(other) {
 if (this.equalsLong(other)) {
 return 0;
 }
 var thisNeg = this.isNegative();
 var otherNeg = other.isNegative();
 if (thisNeg && !otherNeg) {
 return -1;
 }
 if (!thisNeg && otherNeg) {
 return 1;
 }
 // at this point, the signs are the same, so subtraction will not overflow
 if (this.subtract(other).isNegative()) {
 return -1;
 } else {
 return 1;
 }
};
\n\n/**
 * @return {!Kotlin.Long} The negation of this value.
 */
*^ Kotlin.Long.prototype.negate = function() {
 if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {
 return Kotlin.Long.MIN_VALUE;
 } else {
 return this.not().add(Kotlin.Long.ONE);
 }
};
\n\n/**
 * Returns the sum of this and the given Long.
 * @param {Kotlin.Long} other Long to add to this one.
 * @return {!Kotlin.Long} The sum of this and the given Long.
 */
*^ Kotlin.Long.prototype.add = function(other) {
 // Divide each number into 4 chunks of 16 bits, and then sum the chunks.
 var a48 = this.high_ >>> 16;
 var a32 = this.high_ & 0xFFFF;
 var a16 = this.low_ >>> 16;
 var a00 = this.low_ & 0xFFFF;
 var b48 = other.high_ >>> 16;
 var b32 = other.high_ & 0xFFFF;
 var b16 = other.low_ >>> 16;
 var b00 = other.low_ & 0xFFFF;
 var c48 = 0, c32 = 0, c16 = 0, c00 = 0;
 c00 += a00 + b00;
 c16 += c00 >>> 16;
 c00 &= 0xFFFF;
 c16 += a16 + b16;
 c32 += c16 >>> 16;
 c16 &= 0xFFFF;
 c32 += a32 + b32;
 c48 += c32 >>> 16;
 c32 &= 0xFFFF;
 c48 += a48 + b48;
 c48 &= 0xFFFF;
 return Kotlin.Long.fromBits((c16 << 16) | c00, (c48 << 16) | c32);
};
\n\n/**
 * Returns the difference of this and the given Long.
 * @param {Kotlin.Long} other Long to subtract from this.
 * @return {!Kotlin.Long} The difference of this and the given Long.
 */
*^ Kotlin.Long.prototype.subtract = function(other) {
 return this.add(other.negate());
};
\n\n/**
 * Returns the product of this and the given long.
 * @param {Kotlin.Long} other Long to multiply with this.
 * @return {!Kotlin.Long} The product of this and the other.
 */
*^ Kotlin.Long.prototype.multiply = function(other) {
 if (this.isZero()) {
 return Kotlin.Long.ZERO;
 } else if (other.isZero()) {
 return Kotlin.Long.ZERO;
 }
 if (this.equalsLong(Kotlin.Long.MIN_VALUE)) {
 return other.isOdd() ? Kotlin.Long.MIN_VALUE : Kotlin.Long.ZERO;
 } else if (other.equalsLong(Kotlin.Long.MIN_VALUE)) {
 return this.isOdd() ? Kotlin.Long.MIN_VALUE : Kotlin.Long.ZERO;
 }
 if (this.isNegative()) {
 if (other.isNegative()) {
 return this.negate().multiply(other.negate());
 } else {
 return this.negate().multiply(other).negate();
 }
 } else if (other.isNegative()) {
 return this.multiply(other.negate()).negate();
 }
 // If both longs are small, use float multiplication
 if (this.lessThan(Kotlin.Long.TWO_PWR_24_) && other.lessThan(Kotlin.Long.TWO_PWR_24_)) {
 return Kotlin.Long.fromNumber(this.toNumber() * other.toNumber());
 }
 // Divide each long into 4 chunks of 16 bits, and then add up 4x4 products.
 // We can

```



```

@param {Kotlin.Long} other The Long with which to OR.\n * @return {!Kotlin.Long} The bitwise-OR of this and
the other.\n */\nKotlin.Long.prototype.or = function(other) {\n return Kotlin.Long.fromBits(this.low_ |
other.low_,\n this.high_ | other.high_);\n};\n\n/**\n * Returns the bitwise-XOR of
this Long and the given one.\n * @param {Kotlin.Long} other The Long with which to XOR.\n * @return
{!Kotlin.Long} The bitwise-XOR of this and the other.\n */\nKotlin.Long.prototype.xor = function(other) {\n return
Kotlin.Long.fromBits(this.low_ ^ other.low_,\n this.high_ ^ other.high_);\n};\n\n/**\n * Returns this Long with bits shifted to the left by the given amount.\n * @param {number} numBits The number of
bits by which to shift.\n * @return {!Kotlin.Long} This shifted to the left by the given amount.\n
*/\nKotlin.Long.prototype.shiftLeft = function(numBits) {\n numBits &= 63;\n if (numBits == 0) {\n return
this;\n } else {\n var low = this.low_;\n if (numBits < 32) {\n var high = this.high_;\n return
Kotlin.Long.fromBits(\n low << numBits,\n (high << numBits) | (low >>> (32 - numBits));\n)\n } else
{\n return Kotlin.Long.fromBits(0, low << (numBits - 32));\n }\n};\n\n/**\n * Returns this Long
with bits shifted to the right by the given amount.\n * @param {number} numBits The number of bits by which to
shift.\n * @return {!Kotlin.Long} This shifted to the right by the given amount.\n
*/\nKotlin.Long.prototype.shiftRight = function(numBits) {\n numBits &= 63;\n if (numBits == 0) {\n return
this;\n } else {\n var high = this.high_;\n if (numBits < 32) {\n var low = this.low_;\n return
Kotlin.Long.fromBits(\n (low >>> numBits) | (high << (32 - numBits)),\n high >> numBits);\n } else
{\n return Kotlin.Long.fromBits(\n high >> (numBits - 32),\n high >= 0 ? 0 : -1);\n }\n }\n};\n\n/**\n * Returns this Long with bits shifted to the right by the given amount, with\n * zeros placed into the
new leading bits.\n * @param {number} numBits The number of bits by which to shift.\n * @return {!Kotlin.Long}
This shifted to the right by the given amount, with\n * zeros placed into the new leading bits.\n
*/\nKotlin.Long.prototype.shiftRightUnsigned
= function(numBits) {\n numBits &= 63;\n if (numBits == 0) {\n return this;\n } else {\n var high =
this.high_;\n if (numBits < 32) {\n var low = this.low_;\n return Kotlin.Long.fromBits(\n (low >>>
numBits) | (high << (32 - numBits)),\n high >>> numBits);\n } else if (numBits == 32) {\n return
Kotlin.Long.fromBits(high, 0);\n } else {\n return Kotlin.Long.fromBits(high >>> (numBits - 32), 0);\n }\n }\n};\n\n// Support for Kotlin\nKotlin.Long.prototype.equals = function (other) {\n return other instanceof
Kotlin.Long && this.equalsLong(other);\n};\n\nKotlin.Long.prototype.compareTo_11rb$ =
Kotlin.Long.prototype.compare;\n\nKotlin.Long.prototype.inc = function() {\n return
this.add(Kotlin.Long.ONE);\n};\n\nKotlin.Long.prototype.dec = function() {\n return
this.add(Kotlin.Long.NEG_ONE);\n};\n\nKotlin.Long.prototype.valueOf = function() {\n return
this.toNumber();\n};\n\nKotlin.Long.prototype.unaryPlus
= function() {\n return this;\n};\n\nKotlin.Long.prototype.unaryMinus =
Kotlin.Long.prototype.negate;\n\nKotlin.Long.prototype.inv =
Kotlin.Long.prototype.not;\n\nKotlin.Long.prototype.rangeTo = function (other) {\n return new
Kotlin.kotlincoroutines.LongRange(this, other);\n};\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n/**\n * @param {string} id\n * @param {Object} declaration\n
*/\nKotlin.defineModule = function (id, declaration) {\n};\n\nKotlin.defineInlineFunction = function(tag, fun) {\n
return fun;\n};\n\nKotlin.wrapFunction = function(fun) {\n var f = function() {\n f = fun();\n return
f.apply(this, arguments);\n }; \n return function() {\n return f.apply(this, arguments);\n
};\n};\n\nKotlin.isTypeOf = function(type) {\n return function (object) {\n
return typeof object === type;\n }\n};\n\nKotlin.isInstanceOf = function (klass) {\n return function (object)
{\n return Kotlin.isType(object, klass);\n }\n};\n\nKotlin.orNull = function (fn) {\n return function (object)
{\n return object == null || fn(object);\n }\n};\n\nKotlin.andPredicate = function (a, b) {\n return function
(object) {\n return a(object) && b(object);\n }\n};\n\nKotlin.kotlinModuleMetadata = function (abiVersion,
moduleName, data) {\n};\n\nKotlin.suspendCall = function(value) {\n return value;\n};\n\nKotlin.coroutineResult
= function(qualifier) {\n throw MarkerError();\n};\n\nKotlin.coroutineController = function(qualifier) {\n

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return NaN;\n }\n if (x > 0) {\n return Math.floor(x);\n }\n return Math.ceil(x);\n};\n\n(function() {\n var epsilon = 2.220446049250313E-16;\n var taylor_2_bound = Math.sqrt(epsilon);\n var taylor_n_bound = Math.sqrt(taylor_2_bound);\n var upper_taylor_2_bound = 1/taylor_2_bound;\n var upper_taylor_n_bound = 1/taylor_n_bound;\n\n if (typeof Math.sinh === \"undefined\") {\n Math.sinh = function(x) {\n if (Math.abs(x) < taylor_n_bound) {\n var result = x;\n } else {\n taylor_2_bound) {\n result += (x * x * x) / 6;\n }\n return result;\n } else {\n var y = Math.exp(x);\n var y1 = 1 / y;\n if (!isFinite(y)) return Math.exp(x - Math.LN2);\n if (!isFinite(y1)) return -Math.exp(-x - Math.LN2);\n return (y - y1) / 2;\n }\n };\n }\n\n if (typeof Math.cosh === \"undefined\") {\n Math.cosh = function(x) {\n var y = Math.exp(x);\n var y1 = 1 / y;\n if (!isFinite(y) || !isFinite(y1)) return Math.exp(Math.abs(x) - Math.LN2);\n return (y + y1) / 2;\n };\n }\n\n if (typeof Math.tanh === \"undefined\") {\n Math.tanh = function(x) {\n if (Math.abs(x) < taylor_n_bound) {\n var result = x;\n } else if (Math.abs(x) > taylor_2_bound) {\n result -= (x * x * x) / 3;\n }\n return result;\n }\n } else {\n var a = Math.exp(+x), b = Math.exp(-x);\n return a === Infinity ? 1 : b === Infinity ? -1 : (a - b) / (a + b);\n }\n\n // Inverse hyperbolic function implementations derived from boost special math functions,\n // Copyright Eric Ford & Hubert Holin 2001.\n\n if (typeof Math.asinh === \"undefined\") {\n var asinh = function(x) {\n if (x >= +taylor_n_bound)\n {\n if (x > upper_taylor_n_bound)\n {\n // approximation by laurent series in 1/x at 0+ order from -1 to 1\n return Math.log(x * 2 + (1 / (x * 2)));\n }\n }\n }\n else if (x > upper_taylor_2_bound)\n {\n // approximation by laurent series in 1/x at 0+ order from -1 to 1\n return Math.log(x + Math.sqrt(x * x + 1));\n }\n else if (x <= -taylor_n_bound)\n {\n return -asinh(-x);\n }\n else\n {\n // approximation by taylor series in x at 0 up to order 2\n var result = x;\n if (Math.abs(x) >= taylor_2_bound)\n {\n var x3 = x * x * x;\n // approximation by taylor series in x at 0 up to order 4\n result -= x3 / 6;\n }\n }\n }\n return result;\n }\n }\n\n Math.asinh = asinh;\n\n if (typeof Math.acosh === \"undefined\") {\n Math.acosh = function(x) {\n if (x < 1)\n {\n return NaN;\n }\n else if (x - 1 >= taylor_n_bound)\n {\n if (x > upper_taylor_2_bound)\n {\n // approximation by laurent series in 1/x at 0+ order from -1 to 0\n return Math.log(x) + Math.LN2;\n }\n }\n }\n else\n {\n return Math.log(x + Math.sqrt(x * x - 1));\n }\n }\n }\n }\n\n else\n {\n var y = Math.sqrt(x - 1);\n // approximation by taylor series in y at 0 up to order 2\n var result = y;\n if (y >= taylor_2_bound)\n {\n var y3 = y * y * y;\n // approximation by taylor series in y at 0 up to order 4\n result -= y3 / 12;\n }\n }\n }\n }\n\n return Math.sqrt(2) * result;\n }\n };\n\n if (typeof Math.atanh === \"undefined\") {\n Math.atanh = function(x) {\n if (Math.abs(x) < taylor_n_bound) {\n var result = x;\n } else if (Math.abs(x) > taylor_2_bound) {\n result += (x * x * x) / 3;\n }\n return result;\n }\n }\n\n return Math.log((1 + x) / (1 - x)) / 2;\n };\n\n if (typeof Math.log1p === \"undefined\") {\n Math.log1p = function(x) {\n if (Math.abs(x) < taylor_n_bound) {\n var x2 = x * x;\n var x3 = x2 * x;\n var x4 = x3 * x;\n // approximation by taylor series in x at 0 up to order 4\n return (-x4 / 4 + x3 / 3 - x2 / 2 + x);\n }\n return Math.log(x + 1);\n };\n }\n\n if (typeof Math.expm1 === \"undefined\") {\n Math.expm1 = function(x) {\n if (Math.abs(x) < taylor_n_bound) {\n var x2 = x * x;\n var x3 = x2 * x;\n var x4 = x3 * x;\n // approximation by taylor series in x at 0 up to order 4\n return (x4 / 24 + x3 / 6 + x2 / 2 + x);\n }\n return Math.exp(x) - 1;\n };\n }\n\n if (typeof Math.hypot === \"undefined\") {\n Math.hypot = function() {\n var y = 0;\n var length = arguments.length;\n for (var i = 0; i < length; i++) {\n if (arguments[i]

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license that can be found in the license/LICENSE.txt file.\n */\n\nKotlin.Kind = {\n CLASS: \"class\",\n INTERFACE: \"interface\",\n OBJECT: \"object\"\n};\n\nKotlin.callGetter = function (thisObject, class,\n propertyName) {\n var propertyDescriptor = Object.getOwnPropertyDescriptor(class, propertyName);\n if\n (propertyDescriptor != null && propertyDescriptor.get != null) {\n return\n propertyDescriptor.get.call(thisObject);\n }\n propertyDescriptor =\n Object.getOwnPropertyDescriptor(thisObject,\n propertyName);\n if (propertyDescriptor != null && \"value\" in propertyDescriptor) {\n return\n thisObject[propertyName];\n }\n return Kotlin.callGetter(thisObject, Object.getPrototypeOf(class),\n propertyName);\n};\n\nKotlin.callSetter = function (thisObject, class, propertyName, value) {\n var\n propertyDescriptor = Object.getOwnPropertyDescriptor(class, propertyName);\n if (propertyDescriptor != null\n && propertyDescriptor.set != null) {\n propertyDescriptor.set.call(thisObject, value);\n return;\n }\n propertyDescriptor = Object.getOwnPropertyDescriptor(thisObject, propertyName);\n if (propertyDescriptor !=\n null && \"value\" in propertyDescriptor) {\n thisObject[propertyName] = value;\n return\n }\n Kotlin.callSetter(thisObject, Object.getPrototypeOf(class), propertyName, value);\n};\n\nfunction\n isInheritanceFromInterface(ctor, iface) {\n if (ctor === iface) return true;\n var metadata = ctor.$metadata$;\n if (metadata != null) {\n var interfaces = metadata.interfaces;\n for (var i = 0; i < interfaces.length; i++)\n {\n if (isInheritanceFromInterface(interfaces[i], iface)) {\n return true;\n }\n }\n }\n var superPrototype = ctor.prototype != null ? Object.getPrototypeOf(ctor.prototype) : null;\n var superConstructor\n = superPrototype != null ? superPrototype.constructor : null;\n return superConstructor != null &&\n isInheritanceFromInterface(superConstructor, iface);\n}\n\n/**\n * @param {*} object\n * @param\n {Function|Object} klass\n * @returns {Boolean}\n */\nKotlin.isType = function (object, klass) {\n if (klass ===\n Object) {\n switch (typeof object) {\n case \"string\":\n case \"number\":\n case\n \"boolean\":\n case \"function\":\n return true;\n default:\n return object instanceof\n Object;\n }\n }\n if (object == null || klass == null || (typeof object !== 'object' && typeof object !== 'function')) {\n return\n false;\n }\n if (typeof klass === \"function\" && object instanceof klass) {\n return true;\n }\n var\n proto = Object.getPrototypeOf(klass);\n var constructor = proto != null ? proto.constructor : null;\n if\n (constructor != null && \"$metadata$\" in constructor) {\n var metadata = constructor.$metadata$;\n if\n (metadata.kind === Kotlin.Kind.OBJECT) {\n return object === klass;\n }\n }\n var classMetadata\n = klass.$metadata$;\n // In WebKit (JavaScriptCore) for some interfaces from DOM typeof returns \"object\",\n nevertheless they can be used in RHS of instanceof\n if (classMetadata == null) {\n return object instanceof\n class;\n }\n if (classMetadata.kind === Kotlin.Kind.INTERFACE && object.constructor != null) {\n return\n isInheritanceFromInterface(object.constructor, class);\n }\n return false;\n}\n\nKotlin.isNumber = function (a) {\n return typeof a == \"number\" || a instanceof\n Kotlin.Long;\n};\n\nKotlin.isChar = function (value) {\n return value instanceof\n Kotlin.BoxedChar;\n};\n\nKotlin.isComparable = function (value) {\n var type = typeof value;\n return type\n === \"string\" ||\n type === \"boolean\" ||\n Kotlin.isNumber(value) ||\n Kotlin.isType(value,\n Kotlin.kotlin.Comparable);\n};\n\nKotlin.isCharSequence = function (value) {\n return typeof value === \"string\"\n || Kotlin.isType(value, Kotlin.kotlin.CharSequence);\n};\n\n/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin\n Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be\n found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get declarations directly under the\n module\n\n@PublishedApi\n nexternal internal fun <T> Array(size: Int): Array<T>\n\n@JsName(\"newArray\")\n nfun\n <T> newArray(size: Int, initialValue: T) = fillArrayVal(Array<T>(size),\n initialValue)\n\n@JsName(\"newArrayF\")\n ninline fun <T> arrayWithFun(size: Int, init: (Int) -> T) =\n fillArrayFun(Array<T>(size), init)\n\n@JsName(\"fillArray\")\n ninline fun <T> fillArrayFun(array: Array<T>, init:\n (Int) -> T): Array<T> {\n for (i in 0..array.size - 1) {\n array[i] = init(i)\n }\n return\n array\n}\n\n@JsName(\"booleanArray\")\n nfun booleanArray(size: Int, init: dynamic): Array<Boolean> {\n val\n result: dynamic = Array<Boolean>(size)\n result.$type$ = \"BooleanArray\"\n return when (init) {\n null,\n
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true -> fillArrayVal(result, false)\n false -> result\n else -> fillArrayFun<Boolean>(result, init)\n
}\n}\n\n@JsName("booleanArrayF")\ninline fun booleanArrayWithFun(size: Int, init: (Int) -> Boolean):
Array<Boolean> = fillArrayFun(booleanArray(size, false),
init)\n\n@JsName("charArray")\n@Suppress("UNUSED_PARAMETER")\nfun charArray(size: Int, init:
dynamic):
Array<Char> {\n val result = js("new Uint16Array(size)")\n result.`$type$` = "CharArray"\n return when
(init) {\n null, true, false -> result // For consistency\n else -> fillArrayFun<Char>(result, init)\n
}\n}\n\n@JsName("charArrayF")\ninline fun charArrayWithFun(size: Int, init: (Int) -> Char): Array<Char> {\n
val array = charArray(size, null)\n for (i in 0..array.size - 1) {\n @Suppress("UNUSED_VARIABLE") //
used in js block\n val value = init(i)\n js("array[i] = value;")\n }\n return
array\n}\n\n@JsName("untypedCharArrayF")\ninline fun untypedCharArrayWithFun(size: Int, init: (Int) -> Char):
Array<Char> {\n val array = Array<Char>(size)\n for (i in 0..array.size - 1) {\n
@Suppress("UNUSED_VARIABLE") // used in js block\n val value = init(i)\n js("array[i] = value;")\n
}\n return array\n}\n\n@JsName("longArray")\nfun longArray(size: Int, init: dynamic): Array<Long> {\n
val result: dynamic = Array<Long>(size)\n result.`$type$` = "LongArray"\n return when (init) {\n null,
true -> fillArrayVal(result, 0L)\n false -> result\n else -> fillArrayFun<Long>(result, init)\n
}\n}\n\n@JsName("longArrayF")\ninline fun longArrayWithFun(size: Int, init: (Int) -> Long): Array<Long> =
fillArrayFun(longArray(size, false), init)\n\nprivate fun <T> fillArrayVal(array: Array<T>, initialValue: T): Array<T>
{\n for (i in 0..array.size - 1) {\n array[i] = initialValue\n }\n return array\n}", "/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\npublic class
Enum<T> : Enum<T>> : Comparable<Enum<T>> {\n @JsName("name$") private var _name: String = ""\n @JsName("ordinal$") private var _ordinal: Int = 0\n val name: String\n get() = _name\n val ordinal: Int\n get() = _ordinal\n override fun compareTo(other: Enum<T>) =
ordinal.compareTo(other.ordinal)\n override fun equals(other: Any?) = this === other\n override fun
hashCode(): Int = js("Kotlin.identityHashCode")(this)\n override fun toString() = name\n companion
object\n}", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js.internal\n\n@JsName("DoubleCompanionObject")\ninternal object
DoubleCompanionObject {\n @JsName("MIN_VALUE")\n const val MIN_VALUE: Double = 4.9E-324\n @JsName("MAX_VALUE")\n const val MAX_VALUE: Double = 1.7976931348623157E308\n @JsName("POSITIVE_INFINITY")\n @Suppress("DIVISION_BY_ZERO")\n const val
POSITIVE_INFINITY: Double = 1.0 / 0.0\n @JsName("NEGATIVE_INFINITY")\n @Suppress("DIVISION_BY_ZERO")\n
const val NEGATIVE_INFINITY: Double = -1.0 / 0.0\n @JsName("NaN")\n @Suppress("DIVISION_BY_ZERO")\n const val NaN: Double = -(0.0 / 0.0)\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 8\n @JsName("SIZE_BITS")\n const val
SIZE_BITS = 64\n}\n\n@JsName("FloatCompanionObject")\ninternal object FloatCompanionObject {\n @JsName("MIN_VALUE")\n const val MIN_VALUE: Float = 1.4E-45F\n @JsName("MAX_VALUE")\n const val MAX_VALUE: Float = 3.4028235E38F\n @JsName("POSITIVE_INFINITY")\n @Suppress("DIVISION_BY_ZERO")\n const val POSITIVE_INFINITY: Float = 1.0F / 0.0F\n @JsName("NEGATIVE_INFINITY")\n @Suppress("DIVISION_BY_ZERO")\n const val
NEGATIVE_INFINITY: Float = -1.0F / 0.0F\n @JsName("NaN")\n @Suppress("DIVISION_BY_ZERO")\n const val NaN: Float = -(0.0F / 0.0F)\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 4\n @JsName("SIZE_BITS")\n const val
SIZE_BITS
= 32\n}\n\n@JsName("IntCompanionObject")\ninternal object IntCompanionObject {\n
@JsName("MIN_VALUE")\n val MIN_VALUE: Int = -2147483647 - 1\n @JsName("MAX_VALUE")\n

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val MAX_VALUE: Int = 2147483647\n\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 4\n\n
@jsName("SIZE_BITS")\n const val SIZE_BITS = 32\n}\n\n@jsName("LongCompanionObject")\ninternal
object LongCompanionObject {\n @JsName("MIN_VALUE")\n val MIN_VALUE: Long =
js("Kotlin.Long.MIN_VALUE")\n\n @JsName("MAX_VALUE")\n val MAX_VALUE: Long =
js("Kotlin.Long.MAX_VALUE")\n\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 8\n\n
@jsName("SIZE_BITS")\n const val SIZE_BITS = 64\n}\n\n@jsName("ShortCompanionObject")\ninternal
object ShortCompanionObject {\n @JsName("MIN_VALUE")\n val MIN_VALUE: Short = -32768\n\n
@jsName("MAX_VALUE")\n val MAX_VALUE: Short = 32767\n\n @JsName("SIZE_BYTES")\n const
val SIZE_BYTES = 2\n\n @JsName("SIZE_BITS")\n
const val SIZE_BITS = 16\n}\n\n@jsName("ByteCompanionObject")\ninternal object ByteCompanionObject
{\n @JsName("MIN_VALUE")\n val MIN_VALUE: Byte = -128\n\n @JsName("MAX_VALUE")\n val
MAX_VALUE: Byte = 127\n\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 1\n\n
@jsName("SIZE_BITS")\n const val SIZE_BITS = 8\n}\n\n@jsName("CharCompanionObject")\ninternal
object CharCompanionObject {\n @JsName("MIN_VALUE")\n public const val MIN_VALUE: Char =
"\u0000"\n\n @JsName("MAX_VALUE")\n public const val MAX_VALUE: Char = "\uFFFF"\n\n
@jsName("MIN_HIGH_SURROGATE")\n public const val MIN_HIGH_SURROGATE: Char = "\uD800"\n\n
@jsName("MAX_HIGH_SURROGATE")\n public const val MAX_HIGH_SURROGATE: Char =
"\uDBFF"\n\n @JsName("MIN_LOW_SURROGATE")\n public const val MIN_LOW_SURROGATE: Char =
"\uDC00"\n\n @JsName("MAX_LOW_SURROGATE")\n public const val MAX_LOW_SURROGATE: Char
= "\uDFFF"\n\n
@jsName("MIN_SURROGATE")\n public const val MIN_SURROGATE: Char =
MIN_HIGH_SURROGATE\n\n @JsName("MAX_SURROGATE")\n public const val MAX_SURROGATE:
Char = MAX_LOW_SURROGATE\n\n @JsName("SIZE_BYTES")\n const val SIZE_BYTES = 2\n\n
@jsName("SIZE_BITS")\n const val SIZE_BITS = 16\n}\n\ninternal object StringCompanionObject
{ }\n\ninternal object BooleanCompanionObject { }\n\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("ArraysKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T>
Array<out T>.component1(): T {\n return get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun ByteArray.component1():
Byte {\n return get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component1(): Short {\n return
get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component1(): Int {\n return
get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component1(): Long {\n return
get(0)\n}\n\n/**\n * Returns 1st *element*\n
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component1(): Float {\n return

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`get(0)`\n\n/\*\*\n \* Returns 1st \*element\* from the array.\n \* \n \* If the size of this array is less than 1, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n

\* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`DoubleArray.component1(): Double` {\n return `get(0)`\n}\n\n/\*\*\n \* Returns 1st \*element\* from the array.\n \* \n \* If the size of this array is less than 1, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`BooleanArray.component1(): Boolean` {\n return `get(0)`\n}\n\n/\*\*\n \* Returns 1st \*element\* from the array.\n \* \n \* If the size of this array is less than 1, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`CharArray.component1(): Char` {\n return `get(0)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic

inline operator fun <T> `Array<out T>.component2(): T` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`ByteArray.component2(): Byte` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`ShortArray.component2(): Short` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`IntArray.component2(): Int` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`LongArray.component2(): Long` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`FloatArray.component2(): Float` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`DoubleArray.component2(): Double` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns

2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`BooleanArray.component2(): Boolean` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 2nd \*element\* from the array.\n \* \n \* If the size of this array is less than 2, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`CharArray.component2(): Char` {\n return `get(1)`\n}\n\n/\*\*\n \* Returns 3rd \*element\* from the array.\n \* \n \* If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

<T> `Array<out T>.component3(): T` {\n return `get(2)`\n}\n\n/\*\*\n \* Returns 3rd \*element\* from the array.\n \* \n \* If the size

of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`ByteArray.component3(): Byte` {\n return `get(2)`\n}\n\n/\*\*\n \* Returns 3rd \*element\* from the array.\n \* \n \* If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n \*^\n@kotlin.internal.InlineOnly\npublic inline operator fun

`ShortArray.component3(): Short` {\n return `get(2)`\n}\n\n/\*\*\n \* Returns 3rd \*element\* from the array.\n \* \n \* If the size of this array is less than 3, throws an `[IndexOutOfBoundsException]` except in Kotlin/JS\n \* where the behavior is unspecified.\n

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*^@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component3(): Int {\n return
get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsExcep]
except in Kotlin/JS\n * where the behavior is unspecified.\n *^@kotlin.internal.InlineOnly\npublic inline operator
fun LongArray.component3(): Long {\n return get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n *
If the size of this array is less than 3, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the
behavior is unspecified.\n *^@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component3():
Float {\n return get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less
than 3, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component3(): Double {\n return
get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component3(): Boolean {\n return
get(2)\n}\n\n**\n * Returns 3rd *element* from the array.\n * \n * If the size of this array is less than 3, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component3(): Char {\n return
get(2)\n}\n\n**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component4(): T {\n return
get(3)\n}\n\n**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline
operator fun ByteArray.component4(): Byte {\n return get(3)\n}\n\n**\n * Returns 4th *element* from the
array.\n * \n * If the size of this array is less than 4, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n
* where the behavior is unspecified.\n *^@kotlin.internal.InlineOnly\npublic inline operator fun
ShortArray.component4(): Short {\n return get(3)\n}\n\n**\n * Returns 4th *element* from the array.\n * \n * If
the size of this array is less than 4, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the
behavior is unspecified.\n *^@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component4(): Int
{\n return get(3)\n}\n\n**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4,
throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component4(): Long {\n return
get(3)\n}\n\n**\n
* Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component4(): Float {\n return
get(3)\n}\n\n**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component4(): Double {\n return
get(3)\n}\n\n**\n * Returns 4th *element* from the array.\n * \n * If the size of this array is less than 4, throws an
[IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component4(): Boolean {\n return
get(3)\n}\n\n**\n * Returns 4th *element* from the array.\n
* \n * If the size of this array is less than 4, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where
the behavior is unspecified.\n *^@kotlin.internal.InlineOnly\npublic inline operator fun CharArray.component4():
Char {\n return get(3)\n}\n\n**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less
than 5, throws an [IndexOutOfBoundsExcep] except in Kotlin/JS\n * where the behavior is unspecified.\n
*^@kotlin.internal.InlineOnly\npublic inline operator fun <T> Array<out T>.component5(): T {\n return
get(4)\n}\n\n**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an

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[IndexOutOfBoundsException] except in Kotlin/JS\n \* where the behavior is unspecified.\n

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*\n@kotlin.internal.InlineOnly\npublic inline operator fun ByteArray.component5(): Byte {\n return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun ShortArray.component5(): Short {\n return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun IntArray.component5(): Int {\n return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun LongArray.component5(): Long {\n return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun FloatArray.component5(): Float {\n return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5,
throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun DoubleArray.component5(): Double {\n return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun BooleanArray.component5(): Boolean {\n return
get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than 5, throws an
[IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n@kotlin.internal.InlineOnly\npublic
inline operator fun CharArray.component5(): Char {\n return get(4)\n}\n\n/**\n * Returns `true` if [element] is
found in the array.\n
*\npublic operator fun <@kotlin.internal.OnlyInputTypes T> Array<out T>.contains(element:
T): Boolean {\n return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\npublic operator fun ByteArray.contains(element: Byte): Boolean {\n return indexOf(element) >= 0\n}\n\n/**\n
 * Returns `true` if [element] is found in the array.\n
*\npublic operator fun ShortArray.contains(element: Short):
Boolean {\n return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\npublic operator fun IntArray.contains(element: Int): Boolean {\n return indexOf(element) >= 0\n}\n\n/**\n
 * Returns `true` if [element] is found in the array.\n
*\npublic operator fun LongArray.contains(element: Long):
Boolean {\n return indexOf(element) >= 0\n}\n\n/**\n * Returns `true` if
[element] is found in the array.\n
*\n@Deprecated("The function has unclear behavior when searching for NaN or
zero values and will be removed soon. Use 'any { it == element }' instead to continue using this behavior, or
'.asList().contains(element: T)' to get the same search behavior as in a list.", ReplaceWith("any { it == element
}"))\n
*\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")\n
*\npublic operator fun FloatArray.contains(element: Float): Boolean {\n return any { it == element }\n}\n\n/**\n
 * Returns `true` if [element] is found in the array.\n
*\n@Deprecated("The function has unclear behavior when searching for
NaN or zero values and will be removed soon. Use 'any { it == element }' instead to continue using this behavior, or
'.asList().contains(element: T)' to get the same search behavior as in a list.", ReplaceWith("any { it == element
}"))\n
*\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince
= "1.7")\n
*\npublic operator fun DoubleArray.contains(element: Double): Boolean {\n return any { it == element
}\n}\n\n/**\n * Returns `true` if [element] is found in the array.\n
*\npublic operator fun
BooleanArray.contains(element: Boolean): Boolean {\n return indexOf(element) >= 0\n}\n\n/**\n * Returns `true`
if [element] is found in the array.\n
*\npublic operator fun CharArray.contains(element: Char): Boolean {\n return
indexOf(element) >= 0\n}\n\n/**\n * Returns an element at the given [index] or throws an
[IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n
*\n * @sample
samples.collections.Collections.Elements.elementAt\n
*\npublic expect fun <T> Array<out T>.elementAt(index:

```

Int): T\n\n/\*\*\n \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAt\n \*/\npublic expect fun ByteArray.elementAt(index: Int): Byte\n\n/\*\*\n \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAt\n \*/\npublic expect fun ShortArray.elementAt(index: Int): Short\n\n/\*\*\n \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAt\n \*/\npublic expect fun IntArray.elementAt(index: Int): Int\n\n/\*\*\n \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAt\n \*/\npublic expect fun LongArray.elementAt(index: Int): Long\n\n/\*\*\n \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAt\n \*/\npublic expect fun FloatArray.elementAt(index: Int): Float\n\n/\*\*\n \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAt\n \*/\npublic expect fun DoubleArray.elementAt(index: Int): Double\n\n/\*\*\n \* Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAt\n \*/\npublic expect fun BooleanArray.elementAt(index: Int): Boolean\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Byte): Byte {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Short): Short {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Int): Int {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Long): Long {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Float): Float {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Double): Double {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Boolean): Boolean {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/\*\*\n \* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n \* \n \* @sample samples.collections.Collections.Elements.elementAtOrElse\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}

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samples.collections.Collections.Elements.elementAtOrElse\n *^@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Double): Double {\n return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrElse\n
*^@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.elementAtOrElse(index: Int, defaultValue: (Int) ->
Boolean): Boolean {\n return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n *^@kotlin.internal.InlineOnly\npublic inline fun
CharArray.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the
[index] is out of bounds of this
array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.elementAtOrNull(index: Int): T? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun ByteArray.elementAtOrNull(index: Int): Byte? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun ShortArray.elementAtOrNull(index: Int): Short? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun IntArray.elementAtOrNull(index: Int): Int? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun LongArray.elementAtOrNull(index: Int): Long? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun FloatArray.elementAtOrNull(index: Int): Float? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.elementAtOrNull(index: Int): Double? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of bounds
of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.elementAtOrNull(index: Int): Boolean? {\n
return this.getOrNull(index)\n}\n\n/**\n
* Returns an element at the given [index] or `null` if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*^@kotlin.internal.InlineOnly\npublic inline fun CharArray.elementAtOrNull(index: Int): Char? {\n return
this.getOrNull(index)\n}\n\n/**\n
* Returns the first element matching the given [predicate], or `null` if no such
element was found.\n * \n * @sample samples.collections.Collections.Elements.find\n
*^@kotlin.internal.InlineOnly\npublic
inline fun <T> Array<out T>.find(predicate: (T) -> Boolean): T? {\n return firstOrNull(predicate)\n}\n\n/**\n
* Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *^@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.find(predicate: (Byte) -> Boolean): Byte? {\n return firstOrNull(predicate)\n}\n\n/**\n
* Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n *^@kotlin.internal.InlineOnly\npublic inline fun

```

ShortArray.find(predicate: (Short) -> Boolean): Short? {\n return firstOrNull(predicate)\n}\n\n/\*\*\n \* Returns the first element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

IntArray.find(predicate: (Int) -> Boolean): Int? {\n return firstOrNull(predicate)\n}\n\n/\*\*\n \* Returns the first element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

LongArray.find(predicate: (Long) -> Boolean): Long? {\n return firstOrNull(predicate)\n}\n\n/\*\*\n \* Returns the first element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

FloatArray.find(predicate: (Float) -> Boolean): Float? {\n return firstOrNull(predicate)\n}\n\n/\*\*\n \* Returns the first element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

DoubleArray.find(predicate: (Double) -> Boolean): Double? {\n return firstOrNull(predicate)\n}\n\n/\*\*\n \* Returns the first element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

BooleanArray.find(predicate: (Boolean) -> Boolean): Boolean? {\n return firstOrNull(predicate)\n}\n\n/\*\*\n \* Returns the first element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

CharArray.find(predicate: (Char) -> Boolean): Char? {\n return firstOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.findLast(predicate: (T) -> Boolean): T? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

ByteArray.findLast(predicate: (Byte) -> Boolean): Byte? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

ShortArray.findLast(predicate: (Short) -> Boolean): Short? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun

IntArray.findLast(predicate: (Int) -> Boolean): Int? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.findLast(predicate: (Long) -> Boolean): Long? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.findLast(predicate: (Float) -> Boolean): Float? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.findLast(predicate: (Double) -> Boolean): Double? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.findLast(predicate: (Boolean) -> Boolean): Boolean? {\n return lastOrNull(predicate)\n}\n\n/\*\*\n \* Returns the last element matching the given [predicate], or `null` if no such element was found.\n \* \n \* @sample samples.collections.Collections.Elements.find\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.findLast(predicate: (Char) -> Boolean): Char? {\n

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return lastOrNull(predicate)\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if
the array is empty.\n */\npublic fun <T> Array<out T>.first(): T {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n *
@throws NoSuchElementException if the array is empty.\n */\npublic fun ByteArray.first(): Byte {\n if
(isEmpty())\n throw NoSuchElementException("Array
is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException
if the array is empty.\n */\npublic fun ShortArray.first(): Short {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n *
@throws NoSuchElementException if the array is empty.\n */\npublic fun IntArray.first(): Int {\n if
(isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun LongArray.first(): Long {\n if
(isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the
first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun FloatArray.first():
Float {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the array is
empty.\n */\npublic fun DoubleArray.first(): Double {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element.\n * \n *
@throws NoSuchElementException if the array is empty.\n */\npublic fun BooleanArray.first(): Boolean {\n if
(isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the
first element.\n * \n * @throws NoSuchElementException if the array is empty.\n */\npublic fun CharArray.first():
Char {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n */\npublic inline fun <T> Array<out T>.first(predicate: (T) -> Boolean): T {\n for
(element in this) if (predicate(element)) return element\n throw NoSuchElementException("Array contains no
element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *
@throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun ByteArray.first(predicate:
(Byte) -> Boolean): Byte {\n for (element in this) if (predicate(element)) return element\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first
element matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun ShortArray.first(predicate: (Short) -> Boolean): Short {\n for (element in this) if
(predicate(element)) return element\n throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n */\npublic inline fun IntArray.first(predicate: (Int) -> Boolean): Int {\n for (element
in this) if (predicate(element)) return element\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws
[NoSuchElementException] if no such element is found.\n */\npublic inline fun LongArray.first(predicate: (Long) -
> Boolean): Long {\n for (element in this) if (predicate(element)) return element\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first
element matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun FloatArray.first(predicate: (Float) -> Boolean): Float {\n for (element in this) if
(predicate(element)) return element\n throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * @throws [NoSuchElementException] if no such
element is found.\n */\npublic inline fun DoubleArray.first(predicate: (Double) -> Boolean): Double {\n for
(element in this) if (predicate(element)) return element\n throw NoSuchElementException("Array contains no
element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n *
@throws [NoSuchElementException] if no such element is found.\n */\npublic inline fun

```

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BooleanArray.first(predicate: (Boolean) -> Boolean): Boolean {
 for (element in this) if (predicate(element))
 return element
 throw NoSuchElementException("Array contains no element matching the
predicate.")
}
/**
 * Returns the first element matching the given [predicate].
 * @throws
 [NoSuchElementException] if no such element is found.
 */
public inline fun CharArray.first(predicate: (Char) ->
Boolean): Char {
 for (element in this)
 if (predicate(element)) return element
 throw NoSuchElementException("Array contains no element matching
the predicate.")
}
/**
 * Returns the first non-null value produced by [transform] function being applied to
elements of this array in iteration order,
 * or throws [NoSuchElementException] if no non-null value was
produced.
 */
@sample samples.collections.Collections.Transformations.firstNotNullOf
*/
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public inline fun <T, R : Any> Array<out
T>.firstNotNullOf(transform: (T) -> R?): R {
 return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the array was transformed to a non-null value.")
}
/**
 * Returns
the first non-null value produced by [transform] function being applied to elements of this array in iteration order,
 * or `null` if no non-null value was produced.
 */
@sample
samples.collections.Collections.Transformations.firstNotNullOf
*/
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
public
inline fun <T, R : Any> Array<out T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {
 for (element in this)
 {
 val result = transform(element)
 if (result != null) {
 return result
 }
 }
 return
null
}
/**
 * Returns the first element, or `null` if the array is empty.
 */
public fun <T> Array<out
T>.firstOrNull(): T? {
 return if (isEmpty()) null else this[0]
}
/**
 * Returns the first element, or `null` if
the array is empty.
 */
public fun ByteArray.firstOrNull(): Byte? {
 return if (isEmpty()) null else
this[0]
}
/**
 * Returns the first element, or `null` if the array is empty.
 */
public fun
ShortArray.firstOrNull(): Short? {
 return if (isEmpty()) null else this[0]
}
/**
 * Returns the first element,
or `null` if the array is empty.
 */
public fun IntArray.firstOrNull(): Int? {
 return if (isEmpty()) null else
this[0]
}
/**
 * Returns the
first element, or `null` if the array is empty.
 */
public fun LongArray.firstOrNull(): Long? {
 return if
(isEmpty()) null else this[0]
}
/**
 * Returns the first element, or `null` if the array is empty.
 */
public fun
FloatArray.firstOrNull(): Float? {
 return if (isEmpty()) null else this[0]
}
/**
 * Returns the first element,
or `null` if the array is empty.
 */
public fun DoubleArray.firstOrNull(): Double? {
 return if (isEmpty()) null
else this[0]
}
/**
 * Returns the first element, or `null` if the array is empty.
 */
public fun
BooleanArray.firstOrNull(): Boolean? {
 return if (isEmpty()) null else this[0]
}
/**
 * Returns the first
element, or `null` if the array is empty.
 */
public fun CharArray.firstOrNull(): Char? {
 return if (isEmpty())
null else this[0]
}
/**
 * Returns the first element matching the given [predicate], or `null` if element was not
found.
 */
public inline fun <T> Array<out T>.firstOrNull(predicate:
(T) -> Boolean): T? {
 for (element in this) if (predicate(element)) return element
 return null
}
/**
 * Returns the first element matching the given [predicate], or `null` if element was not found.
 */
public inline fun
ByteArray.firstOrNull(predicate: (Byte) -> Boolean): Byte? {
 for (element in this) if (predicate(element)) return
element
 return null
}
/**
 * Returns the first element matching the given [predicate], or `null` if element
was not found.
 */
public inline fun ShortArray.firstOrNull(predicate: (Short) -> Boolean): Short? {
 for
(element in this) if (predicate(element)) return element
 return null
}
/**
 * Returns the first element
matching the given [predicate], or `null` if element was not found.
 */
public inline fun
IntArray.firstOrNull(predicate: (Int) -> Boolean): Int? {
 for (element in this) if (predicate(element)) return
element
 return null
}
/**
 * Returns the first element matching the given [predicate],
or `null` if element was not found.
 */
public inline fun LongArray.firstOrNull(predicate: (Long) -> Boolean):
Long? {
 for (element in this) if (predicate(element)) return element
 return null
}
/**
 * Returns the first
element matching the given [predicate], or `null` if element was not found.
 */
public inline fun
FloatArray.firstOrNull(predicate: (Float) -> Boolean): Float? {
 for (element in this) if (predicate(element))
return element
 return null
}
/**
 * Returns the first element matching the given [predicate], or `null` if

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element was not found.\n *^npublic inline fun DoubleArray.firstOrNull(predicate: (Double) -> Boolean): Double?
{\n for (element in this) if (predicate(element)) return element\n return null\n}\n\n/**\n * Returns the first
element matching the given [predicate], or `null` if element was not found.\n *^npublic inline fun
BooleanArray.firstOrNull(predicate: (Boolean) -> Boolean): Boolean? {\n for (element in this)
if (predicate(element)) return element\n return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n *^npublic inline fun CharArray.firstOrNull(predicate: (Char) ->
Boolean): Char? {\n for (element in this) if (predicate(element)) return element\n return null\n}\n\n/**\n *
Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n *^n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.getOrNull(index: Int,
defaultValue: (Int) -> T): T? {\n return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n *^n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.getOrNull(index: Int, defaultValue: (Int) -> Byte): Byte? {\n return if (index >=
0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index]
or the result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*^n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.getOrNull(index: Int, defaultValue: (Int) -> Short):
Short? {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns
an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of
this array.\n *^n@kotlin.internal.InlineOnly\npublic inline fun IntArray.getOrNull(index: Int, defaultValue: (Int) ->
Int): Int? {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n *
Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index] is out of
bounds of this array.\n *^n@kotlin.internal.InlineOnly\npublic inline fun LongArray.getOrNull(index:
Int, defaultValue: (Int) -> Long): Long? {\n return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n *^n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.getOrNull(index: Int, defaultValue: (Int) -> Float): Float? {\n return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*^n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.getOrNull(index: Int, defaultValue: (Int) ->
Double): Double? {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n
* Returns an element at the given [index] or the result of calling the [defaultValue] function if the [index]
is out of bounds of this array.\n *^n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.getOrNull(index:
Int, defaultValue: (Int) -> Boolean): Boolean? {\n return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n *^n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.getOrNull(index: Int, defaultValue: (Int) -> Char): Char? {\n return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*^npublic fun <T> Array<out T>.getOrNull(index: Int): T? {\n return if (index >= 0 && index <= lastIndex)
get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*^npublic fun ByteArray.getOrNull(index: Int): Byte? {\n return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n
* @sample samples.collections.Collections.Elements.getOrNull\n
*^npublic fun ShortArray.getOrNull(index: Int): Short? {\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at
the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*^npublic fun IntArray.getOrNull(index: Int): Int? {\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the given

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[index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\npublic fun LongArray.getOrNull(index: Int): Long? {\n return if (index >= 0 && index <= lastIndex)
get(index) else null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of
this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n *\npublic fun
FloatArray.getOrNull(index: Int): Float? {\n return if (index >= 0 && index <= lastIndex) get(index) else
null\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n *
@sample samples.collections.Collections.Elements.getOrNull\n *\npublic fun DoubleArray.getOrNull(index:
Int): Double? {\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n *\npublic fun BooleanArray.getOrNull(index:
Int): Boolean? {\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n *\npublic fun CharArray.getOrNull(index: Int): Char? {\n
return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns first index of [element], or -
1 if the array does not contain element.\n *\npublic fun <@kotlin.internal.OnlyInputTypes T> Array<out
T>.indexOf(element: T): Int {\n if (element == null) {\n for (index in indices) {\n if (this[index] ==
null) {\n return index\n }\n }\n } else {\n for (index in indices) {\n if (element ==
this[index]) {\n return index\n }\n }\n }\n return -1\n}\n\n/**\n * Returns first index of
[element], or -1 if the array does not contain element.\n
*\npublic fun ByteArray.indexOf(element: Byte): Int {\n for (index in indices) {\n if (element ==
this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns first index of [element], or -1 if
the array does not contain element.\n *\npublic fun ShortArray.indexOf(element: Short): Int {\n for (index in
indices) {\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns
first index of [element], or -1 if the array does not contain element.\n *\npublic fun IntArray.indexOf(element: Int):
Int {\n for (index in indices) {\n if (element == this[index]) {\n return index\n }\n }\n return -
1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n *\npublic fun
LongArray.indexOf(element: Long): Int {\n for (index in indices) {\n if (element == this[index]) {\n
return index\n
 }\n }\n return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n
*\n@Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed
soon. Use 'indexOfFirst { it == element }' instead to continue using this behavior, or '.asList().indexOf(element: T)'
to get the same search behavior as in a list.", ReplaceWith("indexOfFirst { it == element
}"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")\npublic fun
FloatArray.indexOf(element: Float): Int {\n for (index in indices) {\n if (element == this[index]) {\n
return index\n }\n }\n return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not
contain element.\n *\n@Deprecated("The function has unclear behavior when searching for NaN or zero values
and will be removed soon. Use 'indexOfFirst { it == element }' instead to continue using this
behavior, or '.asList().indexOf(element: T)' to get the same search behavior as in a list.",
ReplaceWith("indexOfFirst { it == element }"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.6", hiddenSince = "1.7")\npublic fun DoubleArray.indexOf(element: Double): Int {\n for (index in indices)
{\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns first
index of [element], or -1 if the array does not contain element.\n *\npublic fun BooleanArray.indexOf(element:
Boolean): Int {\n for (index in indices) {\n if (element == this[index]) {\n return index\n }\n
}\n return -1\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain element.\n *\npublic fun
CharArray.indexOf(element: Char): Int {\n for (index in indices) {\n if (element == this[index]) {\n
return index\n }\n }\n return -1\n}\n\n/**\n * Returns

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```

index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n
*\npublic inline fun <T> Array<out T>.indexOfFirst(predicate: (T) -> Boolean): Int {\n for (index in indices) {\n if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nByteArray.indexOfFirst(predicate: (Byte) -> Boolean): Int {\n for (index in indices) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nShortArray.indexOfFirst(predicate: (Short) -> Boolean): Int {\n for (index in indices) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nIntArray.indexOfFirst(predicate: (Int) -> Boolean): Int {\n for (index in indices) {\n if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nLongArray.indexOfFirst(predicate: (Long) -> Boolean): Int {\n for (index in indices) {\n if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nFloatArray.indexOfFirst(predicate: (Float) -> Boolean): Int {\n for (index in indices) {\n if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nDoubleArray.indexOfFirst(predicate: (Double) -> Boolean): Int {\n for (index in indices) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nBooleanArray.indexOfFirst(predicate: (Boolean) -> Boolean): Int {\n for (index in indices) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nCharArray.indexOfFirst(predicate: (Char) -> Boolean): Int {\n for (index in indices) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun <T>\nArray<out T>.indexOfLast(predicate: (T) -> Boolean): Int {\n for (index in indices.reversed()) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nByteArray.indexOfLast(predicate: (Byte) -> Boolean): Int {\n for (index in indices.reversed()) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nShortArray.indexOfLast(predicate: (Short) -> Boolean):\nInt {\n for (index in indices.reversed()) {\n if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nIntArray.indexOfLast(predicate: (Int) -> Boolean): Int {\n for (index in indices.reversed()) {\n if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun\nLongArray.indexOfLast(predicate: (Long) -> Boolean): Int {\n for (index in indices.reversed()) {\n if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline\nfun FloatArray.indexOfLast(predicate: (Float) -> Boolean): Int {\n for (index in indices.reversed()) {\n if\n(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun

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DoubleArray.indexOfLast(predicate: (Double) -> Boolean): Int {\n for (index in indices.reversed()) {\n if
(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last
element matching the given [predicate], or -1 if the array does not contain such element.\n */\npublic inline fun
BooleanArray.indexOfLast(predicate: (Boolean) -> Boolean): Int {\n for (index in indices.reversed()) {\n if
(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last
element matching the given [predicate], or
-1 if the array does not contain such element.\n */\npublic inline fun CharArray.indexOfLast(predicate: (Char) ->
Boolean): Int {\n for (index in indices.reversed()) {\n if (predicate(this[index])) {\n return index\n
}\n }\n return -1\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array
is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun <T> Array<out T>.last():
T {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun ByteArray.last(): Byte {\n
if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n *
Returns the last element.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun ShortArray.last(): Short {\n
if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n *
Returns the last element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun IntArray.last(): Int {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n *
\n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun LongArray.last(): Long {\n if (isEmpty())\n throw
NoSuchElementException("Array is empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun FloatArray.last(): Float {\n if (isEmpty())\n throw
NoSuchElementException("Array is
empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\n
public fun DoubleArray.last(): Double {\n if (isEmpty())\n throw NoSuchElementException("Array is
empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\n
public fun BooleanArray.last(): Boolean {\n if (isEmpty())\n throw NoSuchElementException("Array is
empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\n
public fun CharArray.last():
Char {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
this[lastIndex]\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T> Array<out T>.last(predicate: (T) ->
Boolean): T {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun ByteArray.last(predicate: (Byte) -> Boolean):
Byte {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if
(predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws
NoSuchElementException if no such element is found.\n * \n * @sample

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samples.collections.Collections.Elements.last\n *^\npublic inline fun ShortArray.last(predicate: (Short) -> Boolean): Short {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element))\n return element\n }\n throw NoSuchElementException("Array contains no element matching the\n predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws\n NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun IntArray.last(predicate: (Int) -> Boolean): Int\n {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element\n matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws\n NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun LongArray.last(predicate: (Long) -> Boolean): Long\n {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element))\n return element\n }\n throw NoSuchElementException("Array contains no element matching the\n predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws\n NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun FloatArray.last(predicate: (Float) -> Boolean): Float\n {\n for (index in this.indices.reversed()) {\n val element =\n this[index]\n if (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains\n no element matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws\n NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun DoubleArray.last(predicate: (Double) ->\n Boolean): Double {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if\n (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element\n matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n * @throws\n NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun BooleanArray.last(predicate: (Boolean) ->\n Boolean): Boolean {\n for (index in this.indices.reversed())\n {\n val element = this[index]\n if (predicate(element)) return element\n }\n throw\n NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last\n element matching the given [predicate].\n * \n * @throws\n NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n *^\npublic inline fun CharArray.last(predicate:\n (Char) -> Boolean): Char {\n for (index in this.indices.reversed()) {\n val element = this[index]\n if\n (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element\n matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain\n element.\n * \n * @kotlin.internal.OnlyInputTypes T> Array<out T>.lastIndexOf(element: T): Int {\n if\n (element == null) {\n for (index in indices.reversed()) {\n if (this[index] == null) {\n return index\n }\n }\n } else {\n for (index in indices.reversed()) {\n if (element ==\n this[index]) {\n return index\n }\n }\n }\n return -1\n}\n\n/**\n * Returns last index of\n [element], or -1 if the array does not contain element.\n * \n * @public fun ByteArray.lastIndexOf(element: Byte): Int\n {\n for (index in indices.reversed()) {\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain element.\n * \n * @public fun\n ShortArray.lastIndexOf(element: Short): Int {\n for (index in indices.reversed()) {\n if (element ==\n this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last index of [element], or -1 if\n the array does not contain element.\n * \n * @public fun IntArray.lastIndexOf(element: Int): Int {\n for (index in\n indices.reversed())\n {\n if (element == this[index]) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns last\n index of [element], or -1 if the array does not contain element.\n * \n * @public fun LongArray.lastIndexOf(element:\n Long): Int {\n for (index in indices.reversed()) {\n if (element == this[index]) {\n return index\n

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}n }n return -1n}\n\n/**n * Returns last index of [element], or -1 if the array does not contain element.\n
*/n@Deprecated("The function has unclear behavior when searching for NaN or zero values and will be removed
soon. Use 'indexOfLast { it == element }' instead to continue using this behavior, or '.asList().lastIndexOf(element:
T)' to get the same search behavior as in a list.", ReplaceWith("indexOfLast { it == element
}"))n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince = "1.6", hiddenSince = "1.7")npublic fun
FloatArray.lastIndexOf(element: Float): Int {n for (index in indices.reversed())
{n if (element == this[index]) {n return index\n }n }n return -1n}\n\n/**n * Returns last
index of [element], or -1 if the array does not contain element.\n */n@Deprecated("The function has unclear
behavior when searching for NaN or zero values and will be removed soon. Use 'indexOfLast { it == element }'
instead to continue using this behavior, or '.asList().lastIndexOf(element: T)' to get the same search behavior as in a
list.", ReplaceWith("indexOfLast { it == element }"))n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.6", hiddenSince = "1.7")npublic fun DoubleArray.lastIndexOf(element: Double): Int {n for
(index in indices.reversed()) {n if (element == this[index]) {n return index\n }n }n return -
1n}\n\n/**n * Returns last index of [element], or -1 if the array does not contain element.\n */npublic fun
BooleanArray.lastIndexOf(element: Boolean): Int {n for (index in indices.reversed())
{n if (element == this[index]) {n return index\n }n }n return -1n}\n\n/**n * Returns last
index of [element], or -1 if the array does not contain element.\n */npublic fun CharArray.lastIndexOf(element:
Char): Int {n for (index in indices.reversed()) {n if (element == this[index]) {n return index\n }n
}n return -1n}\n\n/**n * Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */npublic fun <T> Array<out T>.lastOrNull(): T? {n return if
(isEmpty()) null else this[size - 1]\n}\n\n/**n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n */npublic fun ByteArray.lastOrNull(): Byte? {n return
if (isEmpty()) null else this[size - 1]\n}\n\n/**n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n
*/npublic fun ShortArray.lastOrNull(): Short? {n return if (isEmpty()) null else this[size - 1]\n}\n\n/**n *
Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */npublic fun IntArray.lastOrNull(): Int? {n return if (isEmpty())
null else this[size - 1]\n}\n\n/**n * Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */npublic fun LongArray.lastOrNull(): Long? {n return if
(isEmpty()) null else this[size - 1]\n}\n\n/**n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n */npublic fun FloatArray.lastOrNull(): Float? {n return
if (isEmpty()) null else this[size - 1]\n}\n\n/**n * Returns the last element, or `null` if the array is empty.\n * \n *
@sample samples.collections.Collections.Elements.last\n */npublic fun DoubleArray.lastOrNull():
Double? {n return if (isEmpty()) null else this[size - 1]\n}\n\n/**n * Returns the last element, or `null` if the
array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */npublic fun
BooleanArray.lastOrNull(): Boolean? {n return if (isEmpty()) null else this[size - 1]\n}\n\n/**n * Returns the last
element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */npublic
fun CharArray.lastOrNull(): Char? {n return if (isEmpty()) null else this[size - 1]\n}\n\n/**n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */npublic inline fun <T> Array<out T>.lastOrNull(predicate: (T) ->
Boolean): T? {n for (index in this.indices.reversed()) {n val element = this[index]\n if
(predicate(element)) return element\n }n return null\n}\n\n/**n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */npublic inline fun ByteArray.lastOrNull(predicate: (Byte) ->
Boolean): Byte? {n for (index in this.indices.reversed()) {n val element = this[index]\n if
(predicate(element)) return element\n }n return null\n}\n\n/**n * Returns the last element matching the given
[predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */npublic inline fun ShortArray.lastOrNull(predicate: (Short) ->

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*^@SinceKotlin("1.3")^@kotlin.internal.InlineOnly^public inline fun CharArray.random(): Char {^
 return
 random(Random)^}^n/n/**^
 * Returns a random element from this array using the specified source of
 randomness.^
 * ^
 * @throws NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public
fun <T> Array<out T>.random(random: Random): T {^
 if (isEmpty())^
 throw
 NoSuchElementException("Array is empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a random
 element from this array using the specified source of randomness.^
 * ^
 * @throws NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public fun
ByteArray.random(random: Random): Byte {^
 if (isEmpty())^
 throw NoSuchElementException("Array is
 empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a random element from this array using the
 specified source of randomness.^
 * ^
 * @throws NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public fun ShortArray.random(random: Random): Short {^
 if (isEmpty())^
 throw NoSuchElementException("Array is empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a
 random element from this array using the specified source of randomness.^
 * ^
 * @throws
 NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public fun IntArray.random(random:
 Random): Int {^
 if (isEmpty())^
 throw NoSuchElementException("Array is empty.^")^
 return
 get(random.nextInt(size))^}^n/n/**^
 * Returns
 a random element from this array using the specified source of randomness.^
 * ^
 * @throws
 NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public fun
LongArray.random(random: Random): Long {^
 if (isEmpty())^
 throw NoSuchElementException("Array is
 empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a random element from this array using the
 specified source of randomness.^
 * ^
 * @throws NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public fun FloatArray.random(random: Random): Float {^
 if (isEmpty())^
 throw
 NoSuchElementException("Array is empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a random
 element from this array using the specified source of randomness.^
 * ^
 * @throws NoSuchElementException if
 this array is empty.^
*^@SinceKotlin("1.3")^public fun DoubleArray.random(random: Random): Double {^
 if (isEmpty())^
 throw NoSuchElementException("Array
 is empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a random element from this array using the
 specified source of randomness.^
 * ^
 * @throws NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public fun BooleanArray.random(random: Random): Boolean {^
 if (isEmpty())^
 throw NoSuchElementException("Array is empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a
 random element from this array using the specified source of randomness.^
 * ^
 * @throws
 NoSuchElementException if this array is empty.^
*^@SinceKotlin("1.3")^public fun
CharArray.random(random: Random): Char {^
 if (isEmpty())^
 throw NoSuchElementException("Array is
 empty.^")^
 return get(random.nextInt(size))^}^n/n/**^
 * Returns a random element from this array, or `null` if
 this array is empty.^
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^publi
c inline
fun <T> Array<out T>.randomOrNull(): T? {^
 return randomOrNull(Random)^}^n/n/**^
 * Returns a random
 element from this array, or `null` if this array is empty.^
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^publi
c inline fun ByteArray.randomOrNull(): Byte? {^
 return randomOrNull(Random)^}^n/n/**^
 * Returns a random
 element from this array, or `null` if this array is empty.^
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^publi
c inline fun ShortArray.randomOrNull(): Short? {^
 return randomOrNull(Random)^}^n/n/**^
 * Returns a
 random element from this array, or `null` if this array is empty.^
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^publi
c inline fun IntArray.randomOrNull(): Int? {^
 return randomOrNull(Random)^}^n/n/**^
 * Returns a random
 element from this array, or `null` if this array is

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empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.randomOrNull(): Long? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.randomOrNull(): Float? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.randomOrNull(): Double? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.randomOrNull(): Boolean? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.randomOrNull(): Char? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T> Array<out T>.randomOrNull(random: Random): T? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun ByteArray.randomOrNull(random: Random): Byte? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun ShortArray.randomOrNull(random: Random): Short? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun IntArray.randomOrNull(random: Random): Int? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun LongArray.randomOrNull(random: Random): Long? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun FloatArray.randomOrNull(random: Random): Float? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun DoubleArray.randomOrNull(random: Random): Double? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun BooleanArray.randomOrNull(random:

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Random): Boolean? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of randomness, or `null` if this array is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
CharArray.randomOrNull(random: Random): Char? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or
has more than one element.\n */\npublic fun <T> Array<out T>.single(): T {\n return when (size) {\n 0 ->
throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n */\npublic fun ByteArray.single(): Byte
{\n
 return when (size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else
-> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single
element, or throws an exception if the array is empty or has more than one element.\n */\npublic fun
ShortArray.single(): Short {\n return when (size) {\n 0 -> throw NoSuchElementException("Array is
empty.")\n 1 -> this[0]\n else -> throw IllegalArgumentException("Array has more than one element.")\n
 }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or has more than one
element.\n */\npublic fun IntArray.single(): Int {\n return when (size) {\n 0 -> throw
NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or
throws an exception if
the array is empty or has more than one element.\n */\npublic fun LongArray.single(): Long {\n return when
(size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n */\npublic fun FloatArray.single(): Float
{\n return when (size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n
else -> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the
single element, or throws an exception if the array is empty or has more than one element.\n */\npublic fun
DoubleArray.single(): Double {\n return when (size) {\n 0 -> throw NoSuchElementException("Array is
empty.")\n 1 -> this[0]\n else -> throw IllegalArgumentException("Array
has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or throws an exception if the array is
empty or has more than one element.\n */\npublic fun BooleanArray.single(): Boolean {\n return when (size) {\n
0 -> throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n */\npublic fun CharArray.single(): Char
{\n return when (size) {\n 0 -> throw NoSuchElementException("Array is empty.")\n 1 -> this[0]\n
else -> throw IllegalArgumentException("Array has more than one element.")\n }\n}\n\n/**\n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one matching
element.\n */\npublic inline fun <T> Array<out T>.single(predicate: (T) -> Boolean): T {\n
 var single: T? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if
(found) throw IllegalArgumentException("Array contains more than one matching element.")\n single =
element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as T\n}\n\n/**\n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one
matching element.\n */\npublic inline fun ByteArray.single(predicate: (Byte) -> Boolean): Byte {\n var single:
Byte? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if (found)
throw
IllegalArgumentException("Array contains more than one matching element.")\n single = element\n
found = true\n }\n }\n if (!found) throw NoSuchElementException("Array

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contains no element matching the predicate.)\n @Suppress("UNCHECKED_CAST")\n return single as
Byte\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or
more than one matching element.\n */\npublic inline fun ShortArray.single(predicate: (Short) -> Boolean): Short {\n
var single: Short? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if
(found) throw IllegalArgumentException("Array contains more than one matching element.")\n single =
element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as Short\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one
matching element.\n */\npublic inline fun IntArray.single(predicate:
(Int) -> Boolean): Int {\n var single: Int? = null\n var found = false\n for (element in this) {\n if
(predicate(element)) {\n if (found) throw IllegalArgumentException("Array contains more than one
matching element.")\n single = element\n found = true\n }\n }\n if (!found) throw
NoSuchElementException("Array contains no element matching the predicate.")\n
@Suppress("UNCHECKED_CAST")\n return single as Int\n}\n\n/**\n * Returns the single element matching
the given [predicate], or throws exception if there is no or more than one matching element.\n */\npublic inline fun LongArray.single(predicate: (Long) -> Boolean): Long {\n
var single: Long? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n
if (found) throw IllegalArgumentException("Array contains more than one matching element.")\n
single = element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as Long\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching element.\n
*/\npublic inline fun FloatArray.single(predicate: (Float) -> Boolean): Float {\n
var single: Float? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n
if (found) throw
IllegalArgumentException("Array contains more than one matching element.")\n
single = element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as Float\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one matching
element.\n */\npublic inline fun DoubleArray.single(predicate: (Double) -> Boolean): Double {\n
var single: Double? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n
if (found)
throw IllegalArgumentException("Array contains more than one matching element.")\n
single = element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as Double\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or more than one
matching element.\n */\npublic inline fun BooleanArray.single(predicate: (Boolean) -> Boolean): Boolean {\n
var single: Boolean? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n
if (found) throw
IllegalArgumentException("Array contains more than one matching element.")\n
single = element\n found = true\n }\n }\n if (!found) throw
NoSuchElementException("Array contains no element matching the predicate.")\n
@Suppress("UNCHECKED_CAST")\n return single as Boolean\n}\n\n/**\n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching element.\n */\npublic inline fun CharArray.single(predicate: (Char) -> Boolean): Char {\n
var single: Char? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n
if (found) throw
IllegalArgumentException("Array contains more than one matching element.")\n
single = element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as Char\n}\n\n/**\n * Returns single element, or `null` if the
array is empty or has more than one element.\n */\npublic fun <T> Array<out T>.singleOrNull(): T? {\n
return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one

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element.\n */\npublic fun ByteArray.singleOrNull(): Byte? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n */\npublic fun\nShortArray.singleOrNull(): Short? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element,\nor `null` if the array is empty or has more than one element.\n */\npublic fun IntArray.singleOrNull(): Int? {\n\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more\n than one element.\n */\npublic fun LongArray.singleOrNull(): Long? {\n return if (size == 1) this[0] else\n null\n}\n\n/**\n * Returns single element, or `null` if the array is empty\n or has more than one element.\n */\npublic fun FloatArray.singleOrNull(): Float? {\n return if (size == 1) this[0]\n else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n */\n\n*/\npublic fun DoubleArray.singleOrNull(): Double? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n */\n\n*/\npublic fun BooleanArray.singleOrNull(): Boolean? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single\n element, or `null` if the array is empty or has more than one element.\n */\n\n*/\npublic fun CharArray.singleOrNull():\nChar? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the single element matching the given\n [predicate], or `null` if element was not found or more than one element was found.\n */\n\n*/\npublic inline fun <T>\nArray<out T>.singleOrNull(predicate: (T) -> Boolean): T? {\n var single: T? = null\n var found\n = false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single =\n element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the\n single element matching the given [predicate], or `null` if element was not found or more than one\n element was\n found.\n */\n\n*/\npublic inline fun ByteArray.singleOrNull(predicate: (Byte) -> Boolean): Byte? {\n var single: Byte?\n = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if (found) return\n null\n single = element\n found = true\n }\n }\n if (!found) return null\n return\n single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or\n more than one\n element was found.\n */\n\n*/\npublic inline fun ShortArray.singleOrNull(predicate: (Short) -> Boolean):\nShort? {\n var single: Short? = null\n\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single = element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or more than one\n element was\n found.\n */\n\n*/\npublic inline fun IntArray.singleOrNull(predicate: (Int) -> Boolean): Int? {\n var single:\n Int? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if (found) return\n null\n single = element\n found = true\n }\n }\n if (!found) return null\n return\n single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or\n more than one\n element was found.\n */\n\n*/\npublic inline fun LongArray.singleOrNull(predicate: (Long) -> Boolean):\nLong? {\n var single: Long? =\n null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single = element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or more than one\n element was\n found.\n */\n\n*/\npublic inline fun FloatArray.singleOrNull(predicate: (Float) -> Boolean): Float? {\n var single:\n Float? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if\n (found) return\n null\n single = element\n found = true\n }\n }\n if (!found) return null\n return\n single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or\n more than one\n element was found.\n */\n\n*/\npublic inline fun DoubleArray.singleOrNull(predicate: (Double) ->\nBoolean): Double? {\n\n var single: Double? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if\n (found) return\n null\n single = element\n found = true\n }\n }\n if (!found) return null\n return\n single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not found or\n more than one\n element was found.\n */\n\n*/\npublic inline fun BooleanArray.singleOrNull(predicate: (Boolean) ->\nBoolean): Boolean? {\n var single: Boolean? = null\n var found = false\n for (element in this) {\n if

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(predicate(element)) {\n if (found) return null\n single = element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or\n * `null` if element was not found or more than one element was found.\n */\n\npublic inline fun
CharArray.singleOrNull(predicate: (Char) ->
Boolean): Char? {\n var single: Char? = null\n var found = false\n for (element in this) {\n if
(predicate(element)) {\n if (found) return null\n single = element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns a list containing all elements except first [n]
elements.\n */\n\n * @throws IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun <T> Array<out T>.drop(n: Int): List<T> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun ByteArray.drop(n: Int): List<Byte> {\n
require(n >= 0) { \"Requested element count
$n is less than zero.\" }\n return takeLast((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all
elements except first [n] elements.\n */\n\n * @throws IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun ShortArray.drop(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun IntArray.drop(n: Int): List<Int> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun LongArray.drop(n: Int):
List<Long> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun FloatArray.drop(n: Int): List<Float> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun DoubleArray.drop(n: Int): List<Double> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return
takeLast((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun BooleanArray.drop(n: Int): List<Boolean>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun CharArray.drop(n: Int): List<Char> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n */\n\n * @throws
IllegalArgumentException if [n] is negative.\n */\n\n * @sample
samples.collections.Collections.Transformations.drop\n\npublic fun <T> Array<out T>.dropLast(n: Int): List<T> {\n
require(n >= 0) { \"Requested element count $n is
less than zero.\" }\n return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements
except last [n] elements.\n */\n\n * @throws IllegalArgumentException if [n] is negative.\n */\n\n * @sample

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samples.collections.Collections.Transformations.drop\n *\npublic fun ByteArray.dropLast(n: Int): List<Byte> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun ShortArray.dropLast(n: Int): List<Short> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun
IntArray.dropLast(n: Int): List<Int> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n]
elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun LongArray.dropLast(n: Int): List<Long> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic
fun FloatArray.dropLast(n: Int): List<Float> {\n require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n return take((size - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun DoubleArray.dropLast(n: Int): List<Double>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun BooleanArray.dropLast(n: Int):
List<Boolean> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing
all elements except last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n *
@sample
samples.collections.Collections.Transformations.drop\n *\npublic fun CharArray.dropLast(n: Int):
List<Char> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun <T>
Array<out T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n for (index in lastIndex downTo 0) {\n if
(!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns
a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ByteArray.dropLastWhile(predicate:
(Byte) -> Boolean): List<Byte> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n
return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun ShortArray.dropLastWhile(predicate:
(Short) -> Boolean): List<Short> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n
return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements
except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun IntArray.dropLastWhile(predicate:
(Int) -> Boolean): List<Int> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index]))
{\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all
elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun LongArray.dropLastWhile(predicate:

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(Long) -> Boolean): List<Long> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun FloatArray.dropLastWhile(predicate: (Float) -> Boolean): List<Float> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun DoubleArray.dropLastWhile(predicate: (Double) -> Boolean): List<Double> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun BooleanArray.dropLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun CharArray.dropLastWhile(predicate: (Char) -> Boolean): List<Char> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun <T> Array<out T>.dropWhile(predicate: (T) -> Boolean): List<T> {\n var yielding = false\n val list = ArrayList<T>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun ByteArray.dropWhile(predicate: (Byte) -> Boolean): List<Byte> {\n var yielding = false\n val list = ArrayList<Byte>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun ShortArray.dropWhile(predicate: (Short) -> Boolean): List<Short> {\n var yielding = false\n val list = ArrayList<Short>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun IntArray.dropWhile(predicate: (Int) -> Boolean): List<Int> {\n var yielding = false\n val list = ArrayList<Int>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun LongArray.dropWhile(predicate: (Long) -> Boolean): List<Long> {\n var yielding = false\n val list = ArrayList<Long>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given [predicate].\n * \n * @sample\n samples.collections.Collections.Transformations.drop\n */\n\npublic inline fun FloatArray.dropWhile(predicate: (Float) -> Boolean): List<Float> {\n var yielding = false\n val list = ArrayList<Float>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all

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elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun DoubleArray.dropWhile(predicate:
(Double) -> Boolean): List<Double> {\n var yielding = false\n val list = ArrayList<Double>()\n for (item in
this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n
yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all elements
except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun BooleanArray.dropWhile(predicate:
(Boolean) -> Boolean): List<Boolean> {\n var yielding = false\n val list = ArrayList<Boolean>()\n for (item in
this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n
yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all elements except first elements that
satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic
inline fun CharArray.dropWhile(predicate: (Char) -> Boolean): List<Char> {\n var yielding = false\n val list =
ArrayList<Char>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n
list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n *\npublic inline fun <T> Array<out T>.filter(predicate: (T) ->
Boolean): List<T> {\n return filterTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\npublic inline fun ByteArray.filter(predicate: (Byte) -> Boolean): List<Byte> {\n return
filterTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n *\npublic inline fun
ShortArray.filter(predicate: (Short) -> Boolean): List<Short> {\n return filterTo(ArrayList<Short>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\npublic inline fun IntArray.filter(predicate: (Int) -> Boolean): List<Int> {\n return filterTo(ArrayList<Int>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n *\npublic inline fun LongArray.filter(predicate: (Long) ->
Boolean): List<Long> {\n return filterTo(ArrayList<Long>(), predicate)\n}\n\n/**\n * Returns a list containing
only elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\npublic inline fun FloatArray.filter(predicate: (Float) -> Boolean): List<Float> {\n return
filterTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n *\npublic inline fun
DoubleArray.filter(predicate: (Double) -> Boolean): List<Double> {\n return
filterTo(ArrayList<Double>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given
[predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n *\npublic inline fun
BooleanArray.filter(predicate: (Boolean) -> Boolean): List<Boolean> {\n return filterTo(ArrayList<Boolean>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n *\npublic inline fun CharArray.filter(predicate: (Char) ->
Boolean): List<Char> {\n return filterTo(ArrayList<Char>(), predicate)\n}\n\n/**\n * Returns a list containing
only elements matching the given [predicate].\n * \n * @param [predicate] function that takes the index of an element
and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n *\npublic inline fun <T> Array<out
T>.filterIndexed(predicate:
(index: Int, T) -> Boolean): List<T> {\n return filterIndexedTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns
a list containing only elements matching the given [predicate].\n * \n * @param [predicate] function that takes the index
of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n *
@sample samples.collections.Collections.Filtering.filterIndexed\n *\npublic inline fun
ByteArray.filterIndexed(predicate: (index: Int, Byte) -> Boolean): List<Byte> {\n return

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filterIndexedTo(ArrayList<Byte>(), predicate)\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun ShortArray.filterIndexed(predicate:
(index: Int, Short) -> Boolean): List<Short>
{\n return filterIndexedTo(ArrayList<Short>(), predicate)\n}\n\n/**\n * Returns a list containing only elements
matching the given [predicate].\n * @param [predicate] function that takes the index of an element and the element
itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun IntArray.filterIndexed(predicate:
(index: Int, Int) -> Boolean): List<Int> {\n return filterIndexedTo(ArrayList<Int>(), predicate)\n}\n\n/**\n *
Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n
*\n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
LongArray.filterIndexed(predicate: (index: Int, Long) -> Boolean): List<Long> {\n return
filterIndexedTo(ArrayList<Long>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic
inline fun FloatArray.filterIndexed(predicate: (index: Int, Float) -> Boolean): List<Float> {\n return
filterIndexedTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun DoubleArray.filterIndexed(predicate:
(index: Int, Double) -> Boolean): List<Double> {\n return filterIndexedTo(ArrayList<Double>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n
*\n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
BooleanArray.filterIndexed(predicate: (index: Int, Boolean) -> Boolean): List<Boolean> {\n return
filterIndexedTo(ArrayList<Boolean>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching
the given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n *
and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun CharArray.filterIndexed(predicate:
(index: Int, Char) -> Boolean): List<Char> {\n return filterIndexedTo(ArrayList<Char>(), predicate)\n}\n\n/**\n *
Appends all elements matching
the given [predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element
and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun <T, C : MutableCollection<in T>>
Array<out T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean): C {\n forEachIndexed {
index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and returns the result of
predicate evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\n
public inline fun <C : MutableCollection<in Byte>> ByteArray.filterIndexedTo(destination: C, predicate:
(index: Int, Byte) -> Boolean): C {\n forEachIndexed { index, element ->\n if (predicate(index, element))
destination.add(element)\n }\n return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample

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samples.collections.Collections.Filtering.filterIndexedTo\n *^\\npublic inline fun <C : MutableCollection<in Short>>
ShortArray.filterIndexedTo(destination: C, predicate: (index: Int, Short) -> Boolean): C {\n forEachIndexed {
index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and returns the result of
predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n *^\\npublic
inline fun <C : MutableCollection<in Int>> IntArray.filterIndexedTo(destination: C, predicate: (index: Int, Int) ->
Boolean): C {\n forEachIndexed { index, element ->\n if (predicate(index, element))
destination.add(element)\n }\n return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n *^\\npublic inline fun <C : MutableCollection<in Long>>
LongArray.filterIndexedTo(destination: C, predicate: (index: Int, Long) -> Boolean): C {\n forEachIndexed {
index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * @param [predicate] function
that takes the index of an element and the element itself\n * and returns the result of predicate evaluation on the
element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n *^\\npublic inline fun <C :
MutableCollection<in Float>> FloatArray.filterIndexedTo(destination: C, predicate: (index: Int, Float) -> Boolean):
C {\n forEachIndexed { index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n
return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and the element itself\n * and returns the result of
predicate evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexedTo\n *^\\npublic inline fun <C : MutableCollection<in Double>> DoubleArray.filterIndexedTo(destination:
C, predicate: (index: Int, Double) -> Boolean): C {\n forEachIndexed { index, element ->\n if
(predicate(index, element)) destination.add(element)\n }\n return destination\n}\n\n/**\n * Appends all elements
matching the given [predicate] to the given [destination].\n * @param [predicate] function that takes the index of an
element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n *^\\npublic inline fun <C : MutableCollection<in
Boolean>> BooleanArray.filterIndexedTo(destination: C, predicate: (index: Int, Boolean) -> Boolean): C {\n
forEachIndexed { index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n *
@param [predicate] function that takes the index of an element and
the element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n *^\\npublic inline fun <C : MutableCollection<in Char>>
CharArray.filterIndexedTo(destination: C, predicate: (index: Int, Char) -> Boolean): C {\n forEachIndexed {
index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return
destination\n}\n\n/**\n * Returns a list containing all elements that are instances of specified type parameter R.\n *
\n * @sample samples.collections.Collections.Filtering.filterIsInstance\n *^\\npublic inline fun <reified R>
Array<*>.filterIsInstance(): List<@kotlin.internal.NoInfer R> {\n return
filterIsInstanceTo(ArrayList<R>())\n}\n\n/**\n * Appends all elements that are instances of specified type
parameter R to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstanceTo\n *^\\npublic inline fun <reified R, C
: MutableCollection<in R>> Array<*>.filterIsInstanceTo(destination: C): C {\n for (element in this) if (element is
R) destination.add(element)\n return destination\n}\n\n/**\n * Returns a list containing all elements not matching
the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n *^\\npublic inline fun <T>
Array<out T>.filterNot(predicate: (T) -> Boolean): List<T> {\n return filterNotTo(ArrayList<T>()),

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predicate)\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun ByteArray.filterNot(predicate: (Byte) ->
Boolean): List<Byte> {\n return filterNotTo(ArrayList<Byte>(), predicate)\n}\n\n/**\n * Returns a list containing
all elements not matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*/\npublic inline fun ShortArray.filterNot(predicate: (Short) -> Boolean): List<Short>
{\n return filterNotTo(ArrayList<Short>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not
matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline
fun IntArray.filterNot(predicate: (Int) -> Boolean): List<Int> {\n return filterNotTo(ArrayList<Int>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun LongArray.filterNot(predicate: (Long) ->
Boolean): List<Long> {\n return filterNotTo(ArrayList<Long>(), predicate)\n}\n\n/**\n * Returns a list
containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n */\npublic inline fun FloatArray.filterNot(predicate: (Float) ->
Boolean): List<Float> {\n return filterNotTo(ArrayList<Float>(), predicate)\n}\n\n/**\n * Returns a list
containing all elements
not matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic
inline fun DoubleArray.filterNot(predicate: (Double) -> Boolean): List<Double> {\n return
filterNotTo(ArrayList<Double>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
BooleanArray.filterNot(predicate: (Boolean) -> Boolean): List<Boolean> {\n return
filterNotTo(ArrayList<Boolean>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n */\npublic inline fun
CharArray.filterNot(predicate: (Char) -> Boolean): List<Char> {\n return filterNotTo(ArrayList<Char>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements that are not `null`.\n * \n * @sample
samples.collections.Collections.Filtering.filterNotNull\n
*/\npublic fun <T : Any> Array<out T?>.filterNotNull(): List<T> {\n return
filterNotNullTo(ArrayList<T>())\n}\n\n/**\n * Appends all elements that are not `null` to the given [destination].\n
*\n * @sample samples.collections.Collections.Filtering.filterNotNullTo\n */\npublic fun <C :
MutableCollection<in T>, T : Any> Array<out T?>.filterNotNullTo(destination: C): C {\n for (element in this) if
(element != null) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*/\npublic inline fun <T, C : MutableCollection<in T>> Array<out T>.filterNotTo(destination: C, predicate: (T) ->
Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n */\npublic inline fun <C : MutableCollection<in
Byte>> ByteArray.filterNotTo(destination: C, predicate: (Byte) ->
Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n */\npublic inline fun <C : MutableCollection<in
Short>> ShortArray.filterNotTo(destination: C, predicate: (Short) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n */\npublic inline fun <C : MutableCollection<in Int>>
IntArray.filterNotTo(destination: C, predicate: (Int) -> Boolean): C {\n for (element in this)
if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n */\npublic inline fun <C : MutableCollection<in Long>>
LongArray.filterNotTo(destination: C, predicate: (Long) -> Boolean): C {\n for (element in this) if

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(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Float>>
FloatArray.filterNotTo(destination: C, predicate: (Float) -> Boolean): C {\n for (element in this) if
(!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Double>> DoubleArray.filterNotTo(destination: C, predicate:
(Double) -> Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in
Boolean>> BooleanArray.filterNotTo(destination: C, predicate: (Boolean) -> Boolean): C {\n for (element in this)
if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Char>>
CharArray.filterNotTo(destination: C, predicate: (Char) -> Boolean): C {\n for (element in this)
if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements
matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <T, C : MutableCollection<in T>>
Array<out T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n for (element in this) if
(predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Byte>> ByteArray.filterTo(destination: C, predicate: (Byte) ->
Boolean): C {\n for (element in this) if (predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Short>> ShortArray.filterTo(destination: C, predicate: (Short) ->
Boolean): C {\n for (element in this) if (predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Int>>
IntArray.filterTo(destination: C, predicate: (Int) -> Boolean): C {\n for (element in this) if (predicate(element))
destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to
the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun
<C : MutableCollection<in Long>> LongArray.filterTo(destination: C, predicate: (Long) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n
return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n
*\n * @sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in
Float>> FloatArray.filterTo(destination: C, predicate: (Float) -> Boolean): C {\n for (element in this) if
(predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <C : MutableCollection<in Double>> DoubleArray.filterTo(destination: C, predicate: (Double)
-> Boolean): C {\n for (element in this) if (predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the given [destination].\n * \n *
@sample samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C :
MutableCollection<in Boolean>> BooleanArray.filterTo(destination: C, predicate: (Boolean) -> Boolean): C {\n
for (element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends
all elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *\npublic inline fun <C : MutableCollection<in Char>>
CharArray.filterTo(destination: C, predicate: (Char) -> Boolean): C {\n for (element in this) if
(predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements matching
the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n

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CharArray.filterTo(destination: C, predicate: (Char) -> Boolean): C {\n for (element in this) if (predicate(element)) destination.add(element)\n return destination}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun <T> Array<out T>.slice(indices: IntRange): List<T> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun ByteArray.slice(indices: IntRange): List<Byte> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun ShortArray.slice(indices: IntRange): List<Short> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun IntArray.slice(indices: IntRange): List<Int> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun LongArray.slice(indices: IntRange): List<Long> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun FloatArray.slice(indices: IntRange): List<Float> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun DoubleArray.slice(indices: IntRange): List<Double> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun BooleanArray.slice(indices: IntRange): List<Boolean> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at indices in the specified [indices] range.\n \*\n\npublic fun CharArray.slice(indices: IntRange): List<Char> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive + 1).asList()\n}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n\npublic fun <T> Array<out T>.slice(indices: Iterable<Int>): List<T> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<T>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n\npublic fun ByteArray.slice(indices: Iterable<Int>): List<Byte> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<Byte>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n\npublic fun ShortArray.slice(indices: Iterable<Int>): List<Short> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<Short>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n\npublic fun IntArray.slice(indices: Iterable<Int>): List<Int> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<Int>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n\npublic fun LongArray.slice(indices: Iterable<Int>): List<Long> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<Long>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n\npublic fun FloatArray.slice(indices: Iterable<Int>): List<Float> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<Float>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n\npublic fun DoubleArray.slice(indices: Iterable<Int>): List<Double> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<Double>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list}\n\n\*\*\n \* Returns a list containing elements at specified [indices].\n \*\n

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*^public fun BooleanArray.slice(indices: Iterable<Int>): List<Boolean> {
 val size = indices.collectionSizeOrDefault(10)
 if (size == 0) return emptyList()
 val list = ArrayList<Boolean>(size)
 for (index in indices) {
 list.add(get(index))
 }
 return list
}

* Returns a list containing elements at specified [indices].

*^public fun CharArray.slice(indices: Iterable<Int>): List<Char> {
 val size = indices.collectionSizeOrDefault(10)
 if (size == 0) return emptyList()
 val list = ArrayList<Char>(size)
 for (index in indices) {
 list.add(get(index))
 }
 return list
}

Returns an array containing elements of this array at specified [indices].

*^public fun <T> Array<T>.sliceArray(indices: Collection<Int>): Array<T> {
 val result = arrayOfNulls(this, indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun ByteArray.sliceArray(indices: Collection<Int>): ByteArray {
 val result = ByteArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun ShortArray.sliceArray(indices: Collection<Int>): ShortArray {
 val result = ShortArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun IntArray.sliceArray(indices: Collection<Int>): IntArray {
 val result = IntArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun LongArray.sliceArray(indices: Collection<Int>): LongArray {
 val result = LongArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun FloatArray.sliceArray(indices: Collection<Int>): FloatArray {
 val result = FloatArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun DoubleArray.sliceArray(indices: Collection<Int>): DoubleArray {
 val result = DoubleArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun BooleanArray.sliceArray(indices: Collection<Int>): BooleanArray {
 val result = BooleanArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements of this array at specified [indices].

*^public fun CharArray.sliceArray(indices: Collection<Int>): CharArray {
 val result = CharArray(indices.size)
 var targetIndex = 0
 for (sourceIndex in indices) {
 result[targetIndex++] = this[sourceIndex]
 }
 return result
}

* Returns an array containing elements at indices in the specified [indices] range.

*^public fun <T> Array<T>.sliceArray(indices: IntRange): Array<T> {
 if (indices.isEmpty()) return copyOfRange(0, 0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

* Returns an array containing elements at indices in the specified [indices] range.

*^public fun ByteArray.sliceArray(indices: IntRange): ByteArray {
 if (indices.isEmpty()) return ByteArray(0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

* Returns an array containing elements at indices in the specified [indices] range.

*^public fun ShortArray.sliceArray(indices: IntRange): ShortArray {
 if (indices.isEmpty()) return ShortArray(0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

* Returns an array containing elements at indices in the specified [indices] range.

*^public fun IntArray.sliceArray(indices: IntRange): IntArray {
 if (indices.isEmpty()) return IntArray(0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

* Returns an array containing elements at indices in the specified [indices] range.

*^public fun LongArray.sliceArray(indices: IntRange): LongArray {
 if (indices.isEmpty()) return LongArray(0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

* Returns an array containing elements at indices in the specified [indices] range.

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fun FloatArray.sliceArray(indices: IntRange): FloatArray {
 if (indices.isEmpty()) return FloatArray(0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

/** Returns an array containing elements at indices in the specified [indices] range. */
public fun DoubleArray.sliceArray(indices: IntRange): DoubleArray {
 if (indices.isEmpty()) return DoubleArray(0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

/** Returns an array containing elements at indices in the specified [indices] range. */
public fun BooleanArray.sliceArray(indices: IntRange): BooleanArray {
 if (indices.isEmpty()) return BooleanArray(0)
 return copyOfRange(indices.start, indices.endInclusive + 1)
}

/** Returns a list containing first [n] elements. */
@throws IllegalArgumentException if [n] is negative.
@sample samples.collections.Collections.Transformations.take
public fun <T> Array<out T>.take(n: Int): List<T> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<T>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}

/** Returns a list containing first [n] elements. */
@throws IllegalArgumentException if [n] is negative.
@sample samples.collections.Collections.Transformations.take
public fun ByteArray.take(n: Int): List<Byte> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<Byte>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}

/** Returns a list containing first [n] elements. */
@throws IllegalArgumentException if [n] is negative.
@sample samples.collections.Collections.Transformations.take
public fun ShortArray.take(n: Int): List<Short> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<Short>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}

/** Returns a list containing first [n] elements. */
@throws IllegalArgumentException if [n] is negative.
@sample samples.collections.Collections.Transformations.take
public fun IntArray.take(n: Int): List<Int> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<Int>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}

/** Returns a list containing first [n] elements. */
@throws IllegalArgumentException if [n] is negative.
@sample samples.collections.Collections.Transformations.take
public fun LongArray.take(n: Int): List<Long> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<Long>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}

/** Returns a list containing first [n] elements. */
@throws IllegalArgumentException if [n] is negative.
@sample samples.collections.Collections.Transformations.take
public fun FloatArray.take(n: Int): List<Float> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<Float>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}

/** Returns a list containing first [n] elements. */
@throws IllegalArgumentException if [n] is negative.
@sample samples.collections.Collections.Transformations.take
public fun DoubleArray.take(n: Int): List<Double> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<Double>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}

/** Returns a list containing first [n] elements. */
@throws

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IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun BooleanArray.take(n: Int): List<Boolean> {\n
 require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n if (n >=
size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list = ArrayList<Boolean>(n)\n
for (item in this) {\n list.add(item)\n if (++count == n)\n break\n }\n return list\n}\n\n/**\n *
Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException
if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n *^\npublic fun
CharArray.take(n: Int): List<Char> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if
(n == 0) return emptyList()\n if (n >= size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n
val list = ArrayList<Char>(n)\n for (item in this) {\n list.add(item)\n if (++count == n)\n break\n
 }\n return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun <T> Array<out T>.takeLast(n: Int): List<T>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val
size = size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list =
ArrayList<T>(n)\n
 for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing
last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun ByteArray.takeLast(n: Int): List<Byte> {\n
 require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val size =
size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list = ArrayList<Byte>(n)\n
for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun ShortArray.takeLast(n: Int): List<Short> {\n
 require(n >= 0) { \"Requested element count $n is less than zero.\" }\n
 if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return
listOf(this[size - 1])\n val list = ArrayList<Short>(n)\n for (index in size - n until size)\n list.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun IntArray.takeLast(n: Int): List<Int> {\n
 require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val size =
size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list = ArrayList<Int>(n)\n
for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last
[n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun LongArray.takeLast(n: Int): List<Long> {\n
 require(n >= 0) { \"Requested element count $n is less
than zero.\" }\n if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1)
return listOf(this[size - 1])\n val list = ArrayList<Long>(n)\n for (index in size - n until size)\n list.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws
IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun FloatArray.takeLast(n: Int): List<Float> {\n
 require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return emptyList()\n val size =
size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list = ArrayList<Float>(n)\n
for (index in size - n until size)\n list.add(this[index])\n
return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if
[n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n *^\npublic fun
DoubleArray.takeLast(n: Int): List<Double> {\n require(n >= 0) { \"Requested element count $n is less than
zero.\" }\n if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return

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listOf(this[size - 1])\n val list = ArrayList<Double>(n)\n for (index in size - n until size)\nlist.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws\nIllegalArgumentException if [n] is negative.\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic fun BooleanArray.takeLast(n: Int):\nList<Boolean> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return\nemptyList()\n val\n size = size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list =\nArrayList<Boolean>(n)\n for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic fun CharArray.takeLast(n: Int):\nList<Char> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n if (n == 0) return\nemptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return listOf(this[size - 1])\n val list\n= ArrayList<Char>(n)\n for (index in size - n until size)\n list.add(this[index])\n return list\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic inline fun <T> Array<out\nT>.takeLastWhile(predicate: (T) -> Boolean): List<T> {\n for (index in lastIndex downTo 0) {\n if\n(!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a\nlist containing last elements satisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic inline fun ByteArray.takeLastWhile(predicate:\n(Byte) -> Boolean): List<Byte> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n \nreturn drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements\nsatisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic\ninline fun ShortArray.takeLastWhile(predicate: (Short) -> Boolean): List<Short> {\n for (index in lastIndex\ndownTo 0) {\n if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic inline fun\nIntArray.takeLastWhile(predicate: (Int) -> Boolean): List<Int> {\n for (index in lastIndex downTo 0) {\n if\n(!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a\nlist containing last elements satisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic inline fun LongArray.takeLastWhile(predicate:\n(Long) -> Boolean): List<Long> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n \nreturn drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements\nsatisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic inline fun FloatArray.takeLastWhile(predicate: (Float) -> Boolean): List<Float> {\n for (index in\nlastIndex downTo 0) {\n if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return\ntoList()\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic inline fun DoubleArray.takeLastWhile(predicate:\n(Double) -> Boolean): List<Double> {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n \nreturn drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements\nsatisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic\ninline fun BooleanArray.takeLastWhile(predicate: (Boolean) -> Boolean): List<Boolean> {\n for (index in\nlastIndex downTo 0) {\n if (!predicate(this[index])) {\n \nreturn drop(index + 1)\n }\n }\n return toList()\n}\n\n/**\n * Returns a list containing last elements\nsatisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic\ninline fun CharArray.takeLastWhile(predicate: (Char) -> Boolean): List<Char> {\n for (index in lastIndex\ndownTo 0) {\n if (!predicate(this[index])) {\n return drop(index + 1)\n }\n }\n return\ntoList()\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample\nsamples.collections.Collections.Transformations.take\n *^\npublic inline fun <T> Array<out

```





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 }
}

/**
 * Reverses elements in the array in-place.
 */
public fun FloatArray.reverse(): Unit {
 val midPoint = (size / 2) - 1
 if (midPoint < 0) return
 var reverseIndex = lastIndex
 for (index in 0..midPoint) {
 val tmp = this[index]
 this[index] = this[reverseIndex]
 this[reverseIndex] = tmp
 reverseIndex--
 }
}

/**
 * Reverses elements in the array in-place.
 */
public fun DoubleArray.reverse():
Unit {
 val midPoint = (size / 2) - 1
 if (midPoint < 0) return
 var reverseIndex = lastIndex
 for (index in 0..midPoint) {
 val tmp = this[index]
 this[index] = this[reverseIndex]
 this[reverseIndex] = tmp
 reverseIndex--
 }
}

/**
 * Reverses elements in the array in-place.
 */
public fun
BooleanArray.reverse(): Unit {
 val midPoint = (size / 2) - 1
 if (midPoint < 0) return
 var reverseIndex =
lastIndex
 for (index in 0..midPoint) {
 val
tmp = this[index]
 this[index] = this[reverseIndex]
 this[reverseIndex] = tmp
 reverseIndex--
 }
}

/**
 * Reverses elements in the array in-place.
 */
public fun CharArray.reverse(): Unit {
 val
midPoint = (size / 2) - 1
 if (midPoint < 0) return
 var reverseIndex = lastIndex
 for (index in 0..midPoint)
{
 val tmp = this[index]
 this[index] = this[reverseIndex]
 this[reverseIndex] = tmp
 reverseIndex--
 }
}

/**
 * Reverses elements of the array in the specified range in-place.
 *
 * @param fromIndex the start of the range (inclusive) to reverse.
 * @param toIndex the end of the range (exclusive) to
reverse.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.4")
public fun <T> Array<T>.reverse(fromIndex: Int, toIndex:
Int): Unit {
 AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
 val midPoint = (fromIndex +
toIndex) / 2
 if (fromIndex == midPoint) return
 var reverseIndex = toIndex - 1
 for (index in fromIndex
until midPoint) {
 val tmp = this[index]
 this[index] = this[reverseIndex]
 this[reverseIndex] =
tmp
 reverseIndex--
 }
}

/**
 * Reverses elements of the array in the specified range in-place.
 *
 * @param fromIndex the start of the range (inclusive) to reverse.
 * @param toIndex the end of the range (exclusive)
to reverse.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.4")
public fun ByteArray.reverse(fromIndex: Int, toIndex: Int): Unit {
 AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
 val midPoint = (fromIndex +
toIndex) / 2
 if (fromIndex == midPoint) return
 var reverseIndex = toIndex - 1
 for (index in fromIndex
until midPoint) {
 val tmp = this[index]
 this[index] = this[reverseIndex]
 this[reverseIndex] =
tmp
 reverseIndex--
 }
}

/**
 * Reverses elements of the array in the specified range in-place.
 *
 * @param fromIndex the start of the range (inclusive) to reverse.
 * @param toIndex the end of the range (exclusive)
to reverse.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater
than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.4")
public fun ShortArray.reverse(fromIndex: Int, toIndex: Int): Unit {
 AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
 val midPoint = (fromIndex + toIndex) / 2
 if
(fromIndex == midPoint) return
 var reverseIndex = toIndex - 1
 for (index in fromIndex
until midPoint) {
 val tmp = this[index]
 this[index] = this[reverseIndex]
 this[reverseIndex] =
tmp
 reverseIndex--
 }
}

/**
 * Reverses elements of the array in the specified range in-place.
 *
 * @param fromIndex the start of the range (inclusive) to reverse.
 * @param toIndex the end of the range
(exclusive) to reverse.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex]

```

is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.4")\npublic fun LongArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val midPoint = (fromIndex + toIndex) / 2\n if (fromIndex == midPoint) return\n var reverseIndex = toIndex - 1\n for (index in fromIndex until midPoint) {\n val tmp = this[index]\n this[index] = this[reverseIndex]\n this[reverseIndex] = tmp\n reverseIndex--\n }\n}\n\n/\*\*\n \* Reverses elements of the array in the specified range in-place.\n \* @param fromIndex the start of the range (inclusive) to reverse.\n \* @param toIndex the end of the range (exclusive) to reverse.\n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.4")\npublic fun FloatArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val midPoint = (fromIndex + toIndex) / 2\n if (fromIndex == midPoint) return\n var reverseIndex = toIndex - 1\n for (index in fromIndex until midPoint) {\n val tmp = this[index]\n this[index] = this[reverseIndex]\n this[reverseIndex] = tmp\n reverseIndex--\n }\n}\n\n/\*\*\n \* Reverses elements of the array in the specified range in-place.\n \* @param fromIndex the start of the range (inclusive) to reverse.\n \* @param toIndex the end of the range (exclusive) to reverse.\n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.4")\npublic fun DoubleArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val midPoint = (fromIndex + toIndex) / 2\n if (fromIndex == midPoint) return\n var reverseIndex = toIndex - 1\n for (index in fromIndex until midPoint) {\n val tmp = this[index]\n this[index] = this[reverseIndex]\n this[reverseIndex] = tmp\n reverseIndex--\n }\n}\n\n/\*\*\n \* Reverses elements of the array in the specified range in-place.\n \* @param fromIndex the start of the range (inclusive) to reverse.\n \* @param toIndex the end of the range (exclusive) to reverse.\n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.4")\npublic fun BooleanArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val midPoint = (fromIndex + toIndex) / 2\n if (fromIndex == midPoint) return\n var reverseIndex = toIndex - 1\n for (index in fromIndex until midPoint) {\n val tmp = this[index]\n this[index] = this[reverseIndex]\n this[reverseIndex] = tmp\n reverseIndex--\n }\n}\n\n/\*\*\n \* Reverses elements of the array in the specified range in-place.\n \* @param fromIndex the start of the range (inclusive) to reverse.\n \* @param toIndex the end of the range (exclusive) to reverse.\n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.4")\npublic fun CharArray.reverse(fromIndex: Int, toIndex: Int): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val midPoint = (fromIndex + toIndex) / 2\n if (fromIndex == midPoint) return\n var reverseIndex = toIndex - 1\n for (index in fromIndex until midPoint) {\n val tmp = this[index]\n this[index] = this[reverseIndex]\n this[reverseIndex] = tmp\n reverseIndex--\n }\n}\n\n/\*\*\n \* Returns a list with elements in reversed order.\n \*/\npublic fun <T> Array<out T>.reversed(): List<T> {\n if (isEmpty()) return emptyList()\n val list = toMutableList()\n list.reverse()\n return list\n}\n\n/\*\*\n \* Returns a list with elements in reversed order.\n \*/\npublic fun ByteArray.reversed(): List<Byte> {\n if (isEmpty()) return emptyList()\n val list = toMutableList()\n list.reverse()\n return list\n}\n\n/\*\*\n \* Returns a list with elements in reversed order.\n \*/\npublic fun ShortArray.reversed(): List<Short> {\n if (isEmpty()) return emptyList()\n val list = toMutableList()\n list.reverse()\n return list\n}\n\n/\*\*\n \* Returns a list with elements in reversed order.\n \*/\npublic fun IntArray.reversed(): List<Int> {\n if (isEmpty()) return emptyList()\n val list = toMutableList()\n list.reverse()\n return list\n}\n\n/\*\*\n \* Returns a list with elements in reversed order.\n \*/\npublic fun LongArray.reversed(): List<Long> {\n if (isEmpty()) return emptyList()\n val list = toMutableList()\n list.reverse()\n return list\n}\n\n/\*\*\n \* Returns a list with elements in reversed order.\n \*/\npublic fun

```

FloatArray.reversed(): List<Float> {\n if (isEmpty()) return emptyList()\n val list = toMutableList()\n list.reverse()\n return list}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun
DoubleArray.reversed(): List<Double> {\n if (isEmpty()) return emptyList()\n val list =
 toMutableList()\n list.reverse()\n return list}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun BooleanArray.reversed(): List<Boolean> {\n if (isEmpty()) return emptyList()\n val list =
 toMutableList()\n list.reverse()\n return list}\n\n/**\n * Returns a list with elements in reversed order.\n */\npublic fun CharArray.reversed(): List<Char> {\n if (isEmpty()) return emptyList()\n val list =
 toMutableList()\n list.reverse()\n return list}\n\n/**\n * Returns an array with elements of this array in
 reversed order.\n */\npublic fun <T> Array<T>.reversedArray(): Array<T> {\n if (isEmpty()) return this\n val
 result = arrayOfNulls(this, size)\n val lastIndex = lastIndex\n for (i in 0..lastIndex)\n result[lastIndex - i] =
 this[i]\n return result}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */\npublic fun
ByteArray.reversedArray(): ByteArray {\n if (isEmpty()) return this\n
 val result = ByteArray(size)\n val lastIndex = lastIndex\n for (i in 0..lastIndex)\n result[lastIndex - i] =
 this[i]\n return result}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */\npublic fun
ShortArray.reversedArray(): ShortArray {\n if (isEmpty()) return this\n val result = ShortArray(size)\n val
 lastIndex = lastIndex\n for (i in 0..lastIndex)\n result[lastIndex - i] = this[i]\n return result}\n\n/**\n *
 Returns an array with elements of this array in reversed order.\n */\npublic fun IntArray.reversedArray(): IntArray
 {\n if (isEmpty()) return this\n val result = IntArray(size)\n val lastIndex = lastIndex\n for (i in
 0..lastIndex)\n result[lastIndex - i] = this[i]\n return result}\n\n/**\n * Returns an array with elements of this
 array in reversed order.\n */\npublic fun LongArray.reversedArray(): LongArray {\n if (isEmpty()) return this\n
 val result = LongArray(size)\n val
 lastIndex = lastIndex\n for (i in 0..lastIndex)\n result[lastIndex - i] = this[i]\n return result}\n\n/**\n *
 Returns an array with elements of this array in reversed order.\n */\npublic fun FloatArray.reversedArray():
 FloatArray {\n if (isEmpty()) return this\n val result = FloatArray(size)\n val lastIndex = lastIndex\n for (i
 in 0..lastIndex)\n result[lastIndex - i] = this[i]\n return result}\n\n/**\n * Returns an array with elements of this
 array in reversed order.\n */\npublic fun DoubleArray.reversedArray(): DoubleArray {\n if (isEmpty()) return
 this\n val result = DoubleArray(size)\n val lastIndex = lastIndex\n for (i in 0..lastIndex)\n result[lastIndex -
 i] = this[i]\n return result}\n\n/**\n * Returns an array with elements of this array in reversed order.\n */\npublic
 fun BooleanArray.reversedArray(): BooleanArray {\n if (isEmpty()) return this\n val result =
 BooleanArray(size)\n val lastIndex = lastIndex\n
 for (i in 0..lastIndex)\n result[lastIndex - i] = this[i]\n return result}\n\n/**\n * Returns an array with
 elements of this array in reversed order.\n */\npublic fun CharArray.reversedArray(): CharArray {\n if (isEmpty())
 return this\n val result = CharArray(size)\n val lastIndex = lastIndex\n for (i in 0..lastIndex)\n result[
 lastIndex - i] = this[i]\n return result}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun <T> Array<T>.shuffle(): Unit {\n shuffle(Random)\n}\n\n/**\n *
 Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun ByteArray.shuffle():
 Unit {\n shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun ShortArray.shuffle(): Unit {\n shuffle(Random)\n}\n\n/**\n * Randomly
 shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun IntArray.shuffle():
 Unit {\n shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun LongArray.shuffle(): Unit {\n shuffle(Random)\n}\n\n/**\n * Randomly
 shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun FloatArray.shuffle(): Unit {\n
 shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun DoubleArray.shuffle(): Unit {\n shuffle(Random)\n}\n\n/**\n * Randomly
 shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun BooleanArray.shuffle(): Unit {\n
 shuffle(Random)\n}\n\n/**\n * Randomly shuffles elements in this array in-place.\n */\n@SinceKotlin("1.4")\npublic fun CharArray.shuffle(): Unit {\n shuffle(Random)\n}\n\n/**\n * Randomly
 shuffles elements in this array in-place using the specified [random] instance as the source of randomness.\n */\n * \n *

```

See: [https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun <T> Array<T>.shuffle(random: Random): Unit {\n for (i in lastIndex\n downTo 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the\n * source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun ByteArray.shuffle(random: Random): Unit {\n for (i in lastIndex downTo\n 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the\n * source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic\n fun ShortArray.shuffle(random: Random): Unit {\n for (i in lastIndex downTo 1) {\n val j = random.nextInt(i\n + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n }\n\n/**\n * Randomly shuffles\n * elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun IntArray.shuffle(random: Random): Unit {\n for (i in lastIndex downTo 1)\n {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the\n * source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun LongArray.shuffle(random: Random): Unit {\n for\n (i in lastIndex downTo 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random]\n * instance as the source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun FloatArray.shuffle(random: Random): Unit {\n for (i in lastIndex downTo\n 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the\n * source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun DoubleArray.shuffle(random: Random): Unit {\n for (i in lastIndex\n downTo 1) {\n val j = random.nextInt(i\n + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles\n * elements in this array in-place using the specified [random] instance as the source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun BooleanArray.shuffle(random: Random): Unit {\n for (i in lastIndex\n downTo 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified [random] instance as the\n * source of randomness.\n * \n * See:
```

[https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates\\_shuffle#The\\_modern\\_algorithm](https://en.wikipedia.org/wiki/Fisher%E2%80%93Yates_shuffle#The_modern_algorithm)

```
*\n@SinceKotlin("1.4")\npublic fun CharArray.shuffle(random: Random): Unit {\n for (i in lastIndex downTo\n 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] = this[j]\n this[j] = copy\n }\n}\n\n/**\n * Sorts elements in the array in-place according to natural sort order of the\n * value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve\n * their order relative to each other after sorting.\n * \n * See:
```

```
*\n@SinceKotlin("1.4")\npublic inline fun <T, R : Comparable<R>> Array<out\n T>.sortBy(crossinline selector: (T) -> R?): Unit {\n if (size > 1) sortWith(compareBy(selector))\n}\n\n/**\n * Sorts elements in the array in-place descending according to natural sort order of the value returned by specified
```

```

[selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each
other after sorting.\n *\npublic inline fun <T, R : Comparable<R>> Array<out T>.sortByDescending(crossinline
selector: (T) -> R?): Unit {\n if (size > 1) sortWith(compareByDescending(selector))\n}\n\n/**\n * Sorts elements
in the array in-place descending according to their natural sort order.\n
 * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n
*\npublic fun <T : Comparable<T>> Array<out T>.sortDescending(): Unit {\n
sortWith(reverseOrder())\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural
sort order.\n *\npublic fun ByteArray.sortDescending(): Unit {\n if (size > 1) {\n sort()\n reverse()\n
}\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural sort order.\n *\npublic fun
ShortArray.sortDescending(): Unit {\n if (size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Sorts
elements in the array in-place descending according to their natural sort order.\n *\npublic fun
IntArray.sortDescending(): Unit {\n if (size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Sorts elements
in the array in-place descending according to their natural sort order.\n *\npublic fun LongArray.sortDescending():
Unit {\n if (size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Sorts elements in the array in-place
descending according to their natural sort order.\n *\npublic fun FloatArray.sortDescending(): Unit {\n if (size >
1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Sorts elements in the array in-place descending according to
their natural sort order.\n *\npublic fun DoubleArray.sortDescending(): Unit {\n if (size > 1) {\n sort()\n
reverse()\n }\n}\n\n/**\n * Sorts elements in the array in-place descending according to their natural sort order.\n
*\npublic fun CharArray.sortDescending(): Unit {\n if (size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n *
Returns a list of all elements sorted according to their natural sort order.\n * \n * The sort is _stable_. It means that
equal elements preserve their order relative to each other after sorting.\n *\npublic fun <T : Comparable<T>>
Array<out T>.sorted():
List<T> {\n return sortedArray().asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their
natural sort order.\n *\npublic fun ByteArray.sorted(): List<Byte> {\n return toTypedArray().apply { sort()
}.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n *\npublic fun
ShortArray.sorted(): List<Short> {\n return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of
all elements sorted according to their natural sort order.\n *\npublic fun IntArray.sorted(): List<Int> {\n return
toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural
sort order.\n *\npublic fun LongArray.sorted(): List<Long> {\n return toTypedArray().apply { sort()
}.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n *\npublic fun
FloatArray.sorted(): List<Float> {\n return toTypedArray().apply
{ sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural sort order.\n
*\npublic fun DoubleArray.sorted(): List<Double> {\n return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n
 * Returns a list of all elements sorted according to their natural sort order.\n *\npublic fun CharArray.sorted():
List<Char> {\n return toTypedArray().apply { sort() }.asList()\n}\n\n/**\n * Returns an array with all elements of
this array sorted according to their natural sort order.\n * \n * The sort is _stable_. It means that equal elements
preserve their order relative to each other after sorting.\n *\npublic fun <T : Comparable<T>>
Array<T>.sortedArray(): Array<T> {\n if (isEmpty()) return this\n return this.copyOf().apply { sort()
}\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*\npublic fun ByteArray.sortedArray(): ByteArray {\n if (isEmpty()) return this\n return this.copyOf().apply
{ sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*\npublic fun ShortArray.sortedArray(): ShortArray {\n if (isEmpty()) return this\n return this.copyOf().apply {
sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*\npublic fun IntArray.sortedArray(): IntArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort()
}\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*\npublic fun LongArray.sortedArray(): LongArray {\n if (isEmpty()) return this\n return this.copyOf().apply {
sort() }\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*\npublic fun FloatArray.sortedArray(): FloatArray {\n if (isEmpty()) return this\n return this.copyOf().apply {

```



```

samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>>
LongArray.sortedBy(crossinline selector: (Long) -> R?): List<Long> {\n return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>>
FloatArray.sortedBy(crossinline selector: (Float) -> R?): List<Float> {\n return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>>
DoubleArray.sortedBy(crossinline selector: (Double) -> R?): List<Double> {\n return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>>
BooleanArray.sortedBy(crossinline selector: (Boolean) -> R?): List<Boolean> {\n return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted according to natural sort order
of the value returned by specified [selector] function.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n *\npublic inline fun <R : Comparable<R>>
CharArray.sortedBy(crossinline selector: (Char) -> R?): List<Char> {\n return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural
sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal
elements preserve their order relative to each other after sorting.\n *\npublic inline fun <T, R : Comparable<R>>
Array<out T>.sortedByDescending(crossinline selector: (T) -> R?): List<T> {\n return
sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural sort order of the value returned by specified
[selector] function.\n *\npublic inline fun <R : Comparable<R>> ByteArray.sortedByDescending(crossinline
selector: (Byte) -> R?): List<Byte> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns
a list of all elements sorted descending according to natural sort order of the value returned by specified [selector]
function.\n *\npublic inline fun <R : Comparable<R>> ShortArray.sortedByDescending(crossinline selector:
(Short) -> R?): List<Short> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of
all elements sorted descending according to natural sort order of the value returned by specified [selector]
function.\n *\npublic inline fun <R : Comparable<R>> IntArray.sortedByDescending(crossinline selector: (Int) ->
R?): List<Int> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a list of all elements sorted descending according to natural sort order of the value returned by specified
[selector] function.\n *\npublic inline fun <R : Comparable<R>> LongArray.sortedByDescending(crossinline
selector: (Long) -> R?): List<Long> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n *
Returns a list of all elements sorted descending according to natural sort order of the value returned by specified
[selector] function.\n *\npublic inline fun <R : Comparable<R>> FloatArray.sortedByDescending(crossinline
selector: (Float) -> R?): List<Float> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n *
Returns a list of all elements sorted descending according to natural sort order of the value returned by specified
[selector] function.\n *\npublic inline fun <R : Comparable<R>> DoubleArray.sortedByDescending(crossinline
selector: (Double) -> R?): List<Double> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n *
Returns a list of all elements sorted descending according to natural sort order of the value returned by specified
[selector] function.\n *\npublic inline fun <R : Comparable<R>> BooleanArray.sortedByDescending(crossinline
selector: (Boolean) -> R?): List<Boolean> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n *
Returns a list of all elements sorted descending according to natural sort order of the value returned by specified
[selector] function.\n *\npublic inline fun <R : Comparable<R>> CharArray.sortedByDescending(crossinline
selector: (Char) -> R?): List<Char> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns
a list of all elements sorted descending according to their natural sort order.\n * \n * The sort is _stable_. It means

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that equal elements preserve their order relative to each other after sorting.\n \*/\npublic fun <T> Comparable<T>>  
Array<out T>.sortedDescending(): List<T> {\n return sortedWith(reverseOrder())\n}\n\n/\*\*\n  
\* Returns a list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun  
ByteArray.sortedDescending(): List<Byte> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a  
list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun  
ShortArray.sortedDescending(): List<Short> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns  
a list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun  
IntArray.sortedDescending(): List<Int> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a list  
of all elements sorted descending according to their natural sort order.\n \*/\npublic fun  
LongArray.sortedDescending(): List<Long> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns  
a list of all elements sorted descending according to their natural sort order.\n \*/\npublic fun  
FloatArray.sortedDescending():  
List<Float> {\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a list of all elements sorted  
descending according to their natural sort order.\n \*/\npublic fun DoubleArray.sortedDescending(): List<Double>  
{\n return copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a list of all elements sorted descending  
according to their natural sort order.\n \*/\npublic fun CharArray.sortedDescending(): List<Char> {\n return  
copyOf().apply { sort() }.reversed()\n}\n\n/\*\*\n \* Returns a list of all elements sorted according to the specified  
[comparator].\n \*/\n \* The sort is \_stable\_. It means that equal elements preserve their order relative to each other  
after sorting.\n \*/\npublic fun <T> Array<out T>.sortedWith(comparator: Comparator<in T>): List<T> {\n return  
sortedArrayWith(comparator).asList()\n}\n\n/\*\*\n \* Returns a list of all elements sorted according to the specified  
[comparator].\n \*/\npublic fun ByteArray.sortedWith(comparator: Comparator<in Byte>):  
List<Byte> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/\*\*\n \* Returns a list of all  
elements sorted according to the specified [comparator].\n \*/\npublic fun ShortArray.sortedWith(comparator:  
Comparator<in Short>): List<Short> {\n return toTypedArray().apply { sortWith(comparator)  
}.asList()\n}\n\n/\*\*\n \* Returns a list of all elements sorted according to the specified [comparator].\n \*/\npublic fun  
IntArray.sortedWith(comparator: Comparator<in Int>): List<Int> {\n return toTypedArray().apply {  
sortWith(comparator) }.asList()\n}\n\n/\*\*\n \* Returns a list of all elements sorted according to the specified  
[comparator].\n \*/\npublic fun LongArray.sortedWith(comparator: Comparator<in Long>): List<Long> {\n return  
toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/\*\*\n \* Returns a list of all elements sorted according  
to the specified [comparator].\n \*/\npublic fun FloatArray.sortedWith(comparator: Comparator<in Float>):  
List<Float>  
{\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/\*\*\n \* Returns a list of all elements  
sorted according to the specified [comparator].\n \*/\npublic fun DoubleArray.sortedWith(comparator:  
Comparator<in Double>): List<Double> {\n return toTypedArray().apply { sortWith(comparator)  
}.asList()\n}\n\n/\*\*\n \* Returns a list of all elements sorted according to the specified [comparator].\n \*/\npublic fun  
BooleanArray.sortedWith(comparator: Comparator<in Boolean>): List<Boolean> {\n return  
toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/\*\*\n \* Returns a list of all elements sorted according  
to the specified [comparator].\n \*/\npublic fun CharArray.sortedWith(comparator: Comparator<in Char>):  
List<Char> {\n return toTypedArray().apply { sortWith(comparator) }.asList()\n}\n\n/\*\*\n \* Returns a [List] that  
wraps the original array.\n \*/\npublic expect fun <T> Array<out T>.asList(): List<T>\n\n/\*\*\n \* Returns a [List]  
that wraps the original array.\n  
\*/\npublic expect fun ByteArray.asList(): List<Byte>\n\n/\*\*\n \* Returns a [List] that wraps the original array.\n  
\*/\npublic expect fun ShortArray.asList(): List<Short>\n\n/\*\*\n \* Returns a [List] that wraps the original array.\n  
\*/\npublic expect fun IntArray.asList(): List<Int>\n\n/\*\*\n \* Returns a [List] that wraps the original array.\n  
\*/\npublic expect fun LongArray.asList(): List<Long>\n\n/\*\*\n \* Returns a [List] that wraps the original array.\n  
\*/\npublic expect fun FloatArray.asList(): List<Float>\n\n/\*\*\n \* Returns a [List] that wraps the original  
array.\n \*/\npublic expect fun DoubleArray.asList(): List<Double>\n\n/\*\*\n \* Returns a [List] that wraps the  
original  
array.\n \*/\npublic expect fun BooleanArray.asList(): List<Boolean>



original array.  
`public expect fun CharArray.asList(): List<Char>`  
Returns `true` if the two specified arrays are *deeply* equal to one another, i.e. contain the same number of the same elements in the same order.  
If two corresponding elements are nested arrays, they are also compared deeply.  
If any of arrays contains itself on any nesting level the behavior is undefined.  
The elements of other types are compared for equality with the `[equals][Any.equals]` function.  
For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

`@SinceKotlin("1.1")@kotlin.internal.LowPriorityInOverloadResolution`  
`public expect infix fun <T> Array<out T>.contentDeepEquals(other: Array<out T>): Boolean`  
Returns `true` if the two specified arrays are *deeply* equal to one another, i.e. contain the same number of the same elements in the same order.  
The specified arrays are also considered deeply equal if both are `null`.  
If two corresponding elements are nested arrays, they are also compared deeply.  
If any of arrays contains itself on any nesting level the behavior is undefined.  
The elements of other types are compared for equality with the `[equals][Any.equals]` function.  
For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

`@SinceKotlin("1.4")`  
`public expect infix fun <T> Array<out T>?.contentDeepEquals(other: Array<out T>?): Boolean`  
Returns a hash code based on the contents of this array as if it is `[List]`.  
Nested arrays are treated as lists too.  
If any of arrays contains itself on any nesting level the behavior is undefined.

`@SinceKotlin("1.1")@kotlin.internal.LowPriorityInOverloadResolution`  
`public expect fun <T> Array<out T>.contentDeepHashCode(): Int`  
Returns a hash code based on the contents of this array as if it is `[List]`.  
Nested arrays are treated as lists too.  
If any of arrays contains itself on any nesting level the behavior is undefined.

`@SinceKotlin("1.4")`  
`public expect fun <T> Array<out T>?.contentDeepHashCode(): Int`  
Returns a string representation of the contents of this array as if it is a `[List]`.  
Nested arrays are treated as lists too.  
If any of arrays contains itself on any nesting level that reference is rendered as `"[...]"` to prevent recursion.  
@sample `samples.collections.Arrays.ContentOperations.contentDeepToString`

`@SinceKotlin("1.1")@kotlin.internal.LowPriorityInOverloadResolution`  
`public expect fun <T> Array<out T>.contentDeepToString(): String`  
Returns a string representation of the contents of this array as if it is a `[List]`.  
Nested arrays are treated as lists too.  
If any of arrays contains itself on any nesting level that reference is rendered as `"[...]"` to prevent recursion.  
@sample `samples.collections.Arrays.ContentOperations.contentDeepToString`

`@SinceKotlin("1.4")`  
`public expect fun <T> Array<out T>?.contentDeepToString(): String`  
Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.  
The elements are compared for equality with the `[equals][Any.equals]` function.  
For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

`@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")@SinceKotlin("1.1")@DeprecatedSinceKotlin(hiddenSince = "1.4")`  
`public expect infix fun <T> Array<out T>.contentEquals(other: Array<out T>): Boolean`  
Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.  
The elements are compared for equality with the `[equals][Any.equals]` function.  
For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

`@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")@SinceKotlin("1.1")@DeprecatedSinceKotlin(hiddenSince = "1.4")`  
`public expect infix fun ByteArray.contentEquals(other: ByteArray): Boolean`  
Returns `true` if the two specified arrays are *structurally* equal to one another, i.e. contain the same number of the same elements in the same order.  
The elements are compared for equality with the `[equals][Any.equals]` function.  
For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.

`@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")@SinceKotlin("1.1")@DeprecatedSinceKotlin(hiddenSince = "1.4")`  
`public expect infix fun ShortArray.contentEquals(other: ShortArray): Boolean`  
Returns `true` if the two specified arrays are

\*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that

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`NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.") \n @SinceKotlin("1.1") \n @DeprecatedSinceKotlin(hiddenSince = "1.4") \n public expect infix fun IntArray.contentEquals(other: IntArray): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.") \n @SinceKotlin("1.1") \n @DeprecatedSinceKotlin(hiddenSince = "1.4") \n public expect infix fun LongArray.contentEquals(other: LongArray): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.") \n @SinceKotlin("1.1") \n @DeprecatedSinceKotlin(hiddenSince = "1.4") \n public expect infix fun FloatArray.contentEquals(other: FloatArray): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.") \n @SinceKotlin("1.1") \n @DeprecatedSinceKotlin(hiddenSince = "1.4") \n public expect infix fun DoubleArray.contentEquals(other: DoubleArray): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.") \n @SinceKotlin("1.1") \n @DeprecatedSinceKotlin(hiddenSince = "1.4") \n public expect infix fun BooleanArray.contentEquals(other: BooleanArray): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.") \n @SinceKotlin("1.1") \n @DeprecatedSinceKotlin(hiddenSince = "1.4") \n public expect infix fun CharArray.contentEquals(other: CharArray): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @SinceKotlin("1.4") \n public expect infix fun <T> Array<out T>?.contentEquals(other: Array<out T>?): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @SinceKotlin("1.4") \n public expect infix fun ByteArray?.contentEquals(other: ByteArray?): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n * The elements are compared for equality with the [equals][Any.equals] function. \n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`. \n * \n @SinceKotlin("1.4") \n public expect infix fun ShortArray?.contentEquals(other: ShortArray?): Boolean \n \n ** \n * Returns `true` if the two specified arrays are *structurally* equal to one another, \n * i.e. contain the same number of the same elements in the same order. \n * \n

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array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated(\"Use Kotlin compiler 1.4 to avoid deprecation warning.\")\n@SinceKotlin(\"1.1\")\n@DeprecatedSinceKotlin(hiddenSince = \"1.4\")\npublic expect fun BooleanArray.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@Deprecated(\"Use Kotlin compiler 1.4 to avoid deprecation warning.\")\n@SinceKotlin(\"1.1\")\n@DeprecatedSinceKotlin(hiddenSince = \"1.4\")\npublic expect fun CharArray.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun <T> Array<out T>?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun ByteArray?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun ShortArray?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun IntArray?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun LongArray?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun FloatArray?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun DoubleArray?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun BooleanArray?.contentToString(): String\n/n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*^n@SinceKotlin(\"1.4\")\npublic expect fun CharArray?.contentToString(): String\n/n/\*\*\n \* Copies this array or its subrange into the [destination] array and returns that array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n \*^n@SinceKotlin(\"1.3\")\npublic expect fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): Array<T>\n/n/\*\*\n \* Copies this array or its subrange into the [destination] array and returns that array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the





`samples.collections.Arrays.CopyOfOperations.copyOf`\n \* \npublic expect fun `LongArray.copyOf`():  
`LongArray`\n\n/\*\*\n \* Returns new array  
 which is a copy of the original array.\n \* \n \* @sample `samples.collections.Arrays.CopyOfOperations.copyOf`\n  
 \*\npublic expect fun `FloatArray.copyOf`():  
`FloatArray`\n\n/\*\*\n \* Returns new array which is a copy of the original  
 array.\n \* \n \* @sample `samples.collections.Arrays.CopyOfOperations.copyOf`\n \* \npublic expect fun  
`DoubleArray.copyOf`():  
`DoubleArray`\n\n/\*\*\n \* Returns new array which is a copy of the original array.\n \* \n \*  
 @sample `samples.collections.Arrays.CopyOfOperations.copyOf`\n \* \npublic expect fun `BooleanArray.copyOf`():  
`BooleanArray`\n\n/\*\*\n \* Returns new array which is a copy of the original array.\n \* \n \* @sample  
`samples.collections.Arrays.CopyOfOperations.copyOf`\n \* \npublic expect fun `CharArray.copyOf`():  
`CharArray`\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \*  
 The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If [newSize] is less than the  
 size of the original array, the  
 copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra  
 elements in the copy array are filled with zero values.\n \* \n \* @sample  
`samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf`\n \* \npublic expect fun  
`ByteArray.copyOf`(newSize: Int): `ByteArray`\n\n/\*\*\n \* Returns new array which is a copy of the original array,  
 resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n  
 \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If  
 [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with zero  
 values.\n \* \n \* @sample `samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf`\n \* \npublic  
 expect fun `ShortArray.copyOf`(newSize: Int): `ShortArray`\n\n/\*\*\n \* Returns new array which is a copy of the  
 original array, resized to the given  
 [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* - If  
 [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is  
 greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \*  
 @sample `samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf`\n \* \npublic expect fun  
`IntArray.copyOf`(newSize: Int): `IntArray`\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized  
 to the given [newSize].\n \* The copy is either truncated or padded at the end with zero values if necessary.\n \* \n \* -  
 If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize]  
 is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \*  
 @sample `samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf`\n  
 \*\npublic expect fun `LongArray.copyOf`(newSize: Int): `LongArray`\n\n/\*\*\n \* Returns new array which is a copy  
 of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero  
 values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the  
 [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are  
 filled with zero values.\n \* \n \* @sample `samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf`\n  
 \*\npublic expect fun `FloatArray.copyOf`(newSize: Int): `FloatArray`\n\n/\*\*\n \* Returns new array which is a copy of  
 the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with zero  
 values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the  
 [newSize].\n \* - If [newSize] is greater than the  
 size of the original array, the extra elements in the copy array are filled with zero values.\n \* \n \* @sample  
`samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf`\n \* \npublic expect fun  
`DoubleArray.copyOf`(newSize: Int): `DoubleArray`\n\n/\*\*\n \* Returns new array which is a copy of the original  
 array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with `false` values if  
 necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the  
 [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are  
 filled with `false` values.\n \* \n \* @sample  
`samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf`\n \* \npublic expect fun



BooleanArray.copyOf(newSize: Int): BooleanArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with null char (`\u0000`) values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with null char (`\u0000`) values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \*/\npublic expect fun

CharArray.copyOf(newSize: Int): CharArray\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with `null` values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with `null` values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizingCopyOf\n \*/\n@Suppress("NO\_ACTUAL\_FOR\_EXPECT")\npublic expect fun <T> Array<T>.copyOf(newSize: Int): Array<T?>\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@Suppress("NO\_ACTUAL\_FOR\_EXPECT")\npublic expect fun <T> Array<T>.copyOfRange(fromIndex: Int, toIndex: Int): Array<T>\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic expect fun

ByteArray.copyOfRange(fromIndex: Int, toIndex: Int): ByteArray\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic expect fun

ShortArray.copyOfRange(fromIndex: Int, toIndex: Int): ShortArray\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic expect fun

IntArray.copyOfRange(fromIndex: Int, toIndex: Int): IntArray\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic expect fun

LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic expect fun

FloatArray.copyOfRange(fromIndex: Int, toIndex: Int): FloatArray\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic

expect fun DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic expect fun BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic expect fun CharArray.copyOfRange(fromIndex: Int, toIndex: Int): CharArray\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.3")\npublic expect fun <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.3")\npublic expect fun ByteArray.fill(element: Byte, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.3")\npublic expect fun ShortArray.fill(element: Short, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.3")\npublic expect fun IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.3")\npublic expect fun LongArray.fill(element: Long, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.3")\npublic expect fun FloatArray.fill(element: Float, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@SinceKotlin("1.3")\npublic expect fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int = size): Unit

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*^@SinceKotlin("1.3")\npublic expect fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int =
size): Unit\n\n**\n * Fills this array or its subrange with the specified [element] value.\n
* \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the
range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex]
is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n *^@SinceKotlin("1.3")\npublic expect fun BooleanArray.fill(element:
Boolean, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n**\n * Fills this array or its subrange with the specified
[element] value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param
toIndex the end of the range (exclusive) to fill, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n *^@SinceKotlin("1.3")\npublic
expect fun CharArray.fill(element: Char, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n**\n * Returns the range
of valid indices for the array.\n *^@public val <T> Array<out T>.indices: IntRange\n get() = IntRange(0,
lastIndex)\n\n**\n * Returns the range of valid indices for the array.\n *^@public val ByteArray.indices: IntRange\n
get() = IntRange(0, lastIndex)\n\n**\n * Returns the range of valid indices for the array.\n *^@public val
ShortArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n**\n * Returns the range of valid indices for the
array.\n *^@public val IntArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n**\n * Returns the range of
valid indices for the array.\n *^@public val LongArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n**\n
* Returns the range of valid indices for the array.\n *^@public val FloatArray.indices: IntRange\n get() =
IntRange(0, lastIndex)\n\n**\n * Returns the range of valid
indices for the array.\n *^@public val DoubleArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n**\n *
Returns the range of valid indices for the array.\n *^@public val BooleanArray.indices: IntRange\n get() =
IntRange(0, lastIndex)\n\n**\n * Returns the range of valid indices for the array.\n *^@public val
CharArray.indices: IntRange\n get() = IntRange(0, lastIndex)\n\n**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.isEmpty(): Boolean {\n return size ==
0\n}\n\n**\n * Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.isEmpty(): Boolean {\n return size == 0\n}\n\n**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun ShortArray.isEmpty(): Boolean {\n return size == 0\n}\n\n**\n
* Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun IntArray.isEmpty():
Boolean {\n return size == 0\n}\n\n**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun LongArray.isEmpty(): Boolean {\n return size == 0\n}\n\n**\n
* Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun FloatArray.isEmpty():
Boolean {\n return size == 0\n}\n\n**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.isEmpty(): Boolean {\n return size ==
0\n}\n\n**\n * Returns `true` if the array is empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.isEmpty(): Boolean {\n return size == 0\n}\n\n**\n
* Returns `true` if the array is empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun CharArray.isEmpty():
Boolean {\n return size == 0\n}\n\n**\n * Returns `true` if the array is not empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out
T>.isNotEmpty(): Boolean {\n return !isEmpty()\n}\n\n**\n
* Returns `true` if the array is not empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.isNotEmpty(): Boolean {\n return !isEmpty()\n}\n\n**\n * Returns `true` if the array is not empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun ShortArray.isNotEmpty(): Boolean {\n return
!isEmpty()\n}\n\n**\n * Returns `true` if the array is not empty.\n *^@kotlin.internal.InlineOnly\npublic inline
fun IntArray.isNotEmpty(): Boolean {\n return !isEmpty()\n}\n\n**\n * Returns `true` if the array is not empty.\n
*^@kotlin.internal.InlineOnly\npublic inline fun LongArray.isNotEmpty(): Boolean {\n return
!isEmpty()\n}\n\n**\n * Returns `true` if the array is not empty.\n *^@kotlin.internal.InlineOnly\npublic inline
fun FloatArray.isNotEmpty(): Boolean {\n return !isEmpty()\n}\n\n**\n * Returns `true` if the array is not
empty.\n *^@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.isNotEmpty(): Boolean {\n return

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isEmpty()\n}\n\n/**\n
 * Returns `true` if the array is not empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.isNotEmpty(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if the array is not
empty.\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.isNotEmpty(): Boolean {\n return
isEmpty()\n}\n\n/**\n * Returns the last valid index for the array.\n */\npublic val <T> Array<out T>.lastIndex:
Int\n get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val ByteArray.lastIndex:
Int\n get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val ShortArray.lastIndex:
Int\n get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val IntArray.lastIndex: Int\n
 get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic val LongArray.lastIndex: Int\n
 get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic
val FloatArray.lastIndex: Int\n get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic
val DoubleArray.lastIndex: Int\n get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic
val BooleanArray.lastIndex: Int\n get() = size - 1\n\n/**\n * Returns the last valid index for the array.\n */\npublic
val CharArray.lastIndex: Int\n get() = size - 1\n\n/**\n * Returns an array containing all elements of the original
array and then the given [element].\n */\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect operator
fun <T> Array<T>.plus(element: T): Array<T>\n\n/**\n * Returns an array containing all elements of the original
array and then the given [element].\n */\npublic expect operator fun ByteArray.plus(element: Byte):
ByteArray\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n
*/\n\npublic expect operator fun ShortArray.plus(element: Short): ShortArray\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n
*/\n\npublic expect operator fun IntArray.plus(element: Int): IntArray\n\n/**\n * Returns an array containing all elements of the original
array and then the given [element].\n */\n\npublic expect operator fun LongArray.plus(element: Long):
LongArray\n\n/**\n * Returns an array containing all elements of the original array and then the given [element].\n
*/\n\npublic expect operator fun FloatArray.plus(element: Float): FloatArray\n\n/**\n * Returns an array containing
all elements of the original array and then the given [element].\n */\n\npublic expect operator fun
DoubleArray.plus(element: Double): DoubleArray\n\n/**\n * Returns an array containing all elements of the
original array and then the given [element].\n */\n\npublic expect operator fun BooleanArray.plus(element: Boolean):
BooleanArray\n\n/**\n * Returns an array containing all elements of the original array and then the given
[element].\n
*/\n\npublic expect operator fun CharArray.plus(element: Char): CharArray\n\n/**\n * Returns an array containing
all elements of the original array and then all elements of the given [elements] collection.\n
*/\n\n@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect operator fun <T> Array<T>.plus(elements:
Collection<T>): Array<T>\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] collection.\n */\n\npublic expect operator fun ByteArray.plus(elements:
Collection<Byte>): ByteArray\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] collection.\n */\n\npublic expect operator fun ShortArray.plus(elements:
Collection<Short>): ShortArray\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] collection.\n */\n\npublic expect operator fun IntArray.plus(elements:
Collection<Int>): IntArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements]
collection.\n */\n\npublic expect operator fun LongArray.plus(elements: Collection<Long>): LongArray\n\n/**\n *
Returns an array containing all elements of the original array and then all elements of the given [elements]
collection.\n */\n\npublic expect operator fun FloatArray.plus(elements: Collection<Float>): FloatArray\n\n/**\n *
Returns an array containing all elements of the original array and then all elements of the given [elements]
collection.\n */\n\npublic expect operator fun DoubleArray.plus(elements: Collection<Double>):
DoubleArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the
given [elements] collection.\n */\n\npublic expect operator fun BooleanArray.plus(elements: Collection<Boolean>):
BooleanArray\n\n/**\n * Returns an array containing all elements of the original array and then all elements of the

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given [elements]

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collection.\n *^/npublic expect operator fun CharArray.plus(elements: Collection<Char>): CharArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect operator fun <T> Array<T>.plus(elements: Array<out T>): Array<T>\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun ByteArray.plus(elements: ByteArray): ByteArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun ShortArray.plus(elements: ShortArray): ShortArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun IntArray.plus(elements: IntArray): IntArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun LongArray.plus(elements: LongArray): LongArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun FloatArray.plus(elements: FloatArray): FloatArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun DoubleArray.plus(elements: DoubleArray): DoubleArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun BooleanArray.plus(elements: BooleanArray): BooleanArray\n/n/**\n * Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n *^/npublic expect operator fun CharArray.plus(elements: CharArray): CharArray\n/n/**\n * Returns an array containing all elements of the original array and then the given [element].\n *^/@Suppress("NO_ACTUAL_FOR_EXPECT")\npublic expect fun <T> Array<T>.plusElement(element: T): Array<T>\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun IntArray.sort(): Unit\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun LongArray.sort(): Unit\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun ByteArray.sort(): Unit\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun ShortArray.sort(): Unit\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun DoubleArray.sort(): Unit\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun FloatArray.sort(): Unit\n/n/**\n * Sorts the array in-place.\n * \n * @sample samples.collections.Arrays.Sorting.sortArray\n *^/npublic expect fun CharArray.sort(): Unit\n/n/**\n * Sorts the array in-place according to the natural order of its elements.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @sample samples.collections.Arrays.Sorting.sortArrayOfComparable\n *^/npublic expect fun <T : Comparable<T>> Array<out T>.sort(): Unit\n/n/**\n * Sorts a range in the array in-place.\n * \n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable\n *^/@SinceKotlin("1.4")\npublic expect fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n/n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
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samples.collections.Arrays.Sorting.sortRangeOfArray\n \* \n \* @SinceKotlin("1.4")\n public expect fun  
 ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n \* \n \* @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n \*  
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n \* \n \* @throws  
 IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \*  
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \* \n \* @sample  
 samples.collections.Arrays.Sorting.sortRangeOfArray\n \* \n \* @SinceKotlin("1.4")\n public expect fun  
 ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n \* \n \* @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n \*  
 @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is  
 less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if  
 [fromIndex]  
 is greater than [toIndex].\n \* \n \* @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n \*  
 \* \n \* @SinceKotlin("1.4")\n public expect fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n \* \n \*  
 Sorts a range in the array in-place.\n \* \n \* @param fromIndex the start of the range (inclusive) to sort, 0 by  
 default.\n \* @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n \* \n \* @throws  
 IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \*  
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \* \n \* @sample  
 samples.collections.Arrays.Sorting.sortRangeOfArray\n \* \n \* @SinceKotlin("1.4")\n public expect fun  
 LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n \* \n \* @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n \*  
 @param toIndex the end of the range (exclusive) to  
 sort, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or  
 [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than  
 [toIndex].\n \* \n \* @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n \*  
 \* \n \* @SinceKotlin("1.4")\n public expect fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n \* \n \*  
 \* Sorts a range in the array in-place.\n \* \n \* @param fromIndex the start of the range (inclusive) to sort, 0 by  
 default.\n \* @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n \* \n \* @throws  
 IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \*  
 @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \* \n \* @sample  
 samples.collections.Arrays.Sorting.sortRangeOfArray\n \* \n \* @SinceKotlin("1.4")\n public expect fun  
 DoubleArray.sort(fromIndex:  
 Int = 0, toIndex: Int = size): Unit\n \* \n \* @param fromIndex the start  
 of the range (inclusive) to sort, 0 by default.\n \* @param toIndex the end of the range (exclusive) to sort, size of this  
 array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is  
 greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*  
 \* \n \* @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n \* \n \* @SinceKotlin("1.4")\n public expect  
 fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit\n \* \n \* @param fromIndex the start of the range (inclusive) to sort.\n \*  
 @param toIndex  
 the end of the range (exclusive) to sort.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than  
 zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is  
 greater than [toIndex].\n \* \n \* @SinceKotlin("1.4")\n public fun <T : Comparable<T>> Array<out  
 T>.sortDescending(fromIndex: Int, toIndex: Int): Unit { \n \* \n \* sortWith(reverseOrder(), fromIndex,  
 toIndex)\n \* \n \* } \n \* \n \* Sorts elements of the array in the specified range in-place.\n \* The elements are sorted  
 descending according to their natural sort order.\n \* \n \* @param fromIndex the start of the range (inclusive) to  
 sort.\n \* @param toIndex the end of the range (exclusive) to sort.\n \* \n \* @throws IndexOutOfBoundsException if



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expect fun <T> Array<out T>.sortWith(comparator: Comparator<in
T>, fromIndex: Int = 0, toIndex: Int = size): Unit\n\n/**\n * Returns an array of Boolean containing all of the
elements of this generic array.\n */\npublic fun Array<out Boolean>.toBooleanArray(): BooleanArray {\n return
BooleanArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of Byte containing all of the elements of
this generic array.\n */\npublic fun Array<out Byte>.toByteArray(): ByteArray {\n return ByteArray(size) { index
-> this[index] }\n}\n\n/**\n * Returns an array of Char containing all of the elements of this generic array.\n
*/\npublic fun Array<out Char>.toCharArray(): CharArray {\n return CharArray(size) { index -> this[index]
}\n}\n\n/**\n * Returns an array of Double containing all of the elements of this generic array.\n */\npublic fun
Array<out Double>.toDoubleArray(): DoubleArray {\n return DoubleArray(size) { index -> this[index]
}\n}\n\n/**\n * Returns an array of Float containing all of the elements of this generic array.\n */\npublic
fun Array<out Float>.toFloatArray(): FloatArray {\n return FloatArray(size) { index -> this[index] }\n}\n\n/**\n
 * Returns an array of Int containing all of the elements of this generic array.\n */\npublic fun Array<out
Int>.toIntArray(): IntArray {\n return IntArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of
Long containing all of the elements of this generic array.\n */\npublic fun Array<out Long>.toLongArray():
LongArray {\n return LongArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of Short containing
all of the elements of this generic array.\n */\npublic fun Array<out Short>.toShortArray(): ShortArray {\n return
ShortArray(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object array containing all of the elements
of this primitive array.\n */\npublic expect fun ByteArray.toTypedArray(): Array<Byte>\n\n/**\n * Returns a
typed object array containing all of the elements of this primitive array.\n */\npublic
expect fun ShortArray.toTypedArray(): Array<Short>\n\n/**\n * Returns a *typed* object array containing all of
the elements of this primitive array.\n */\npublic expect fun IntArray.toTypedArray(): Array<Int>\n\n/**\n *
Returns a *typed* object array containing all of the elements of this primitive array.\n */\npublic expect fun
LongArray.toTypedArray(): Array<Long>\n\n/**\n * Returns a *typed* object array containing all of the elements
of this primitive array.\n */\npublic expect fun FloatArray.toTypedArray(): Array<Float>\n\n/**\n * Returns a
typed object array containing all of the elements of this primitive array.\n */\npublic expect fun
DoubleArray.toTypedArray(): Array<Double>\n\n/**\n * Returns a *typed* object array containing all of the
elements of this primitive array.\n */\npublic expect fun BooleanArray.toTypedArray(): Array<Boolean>\n\n/**\n
 * Returns a *typed* object array containing all of the elements of this primitive array.\n */\npublic expect fun
CharArray.toTypedArray():
Array<Char>\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied
to elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <T, K, V>
Array<out T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied
to elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
ByteArray.associate(transform: (Byte) -> Pair<K, V>): Map<K, V> {\n val capacity
= mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied
to elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
ShortArray.associate(transform: (Short) -> Pair<K, V>): Map<K, V> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform] function\n * applied
to elements of the given array.\n * \n * If any of two pairs would have the same key the last one gets added to the
map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n */\npublic inline fun <K, V>
CharArray.associate(transform: (Char) -> Pair<K, V>): Map<K, V> {\n val capacity
= mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity),
transform)\n}

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elements of the given array.\n

\* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n \*\npublic inline fun <K, V> IntArray.associate(transform: (Int) -> Pair<K, V>): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/\*\*\n \* Returns a [Map] containing key-value pairs provided by [transform] function\n \* applied to elements of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n \*\npublic inline fun <K, V> LongArray.associate(transform: (Long) -> Pair<K, V>): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n

return associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/\*\*\n \* Returns a [Map] containing key-value pairs provided by [transform] function\n \* applied to elements of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n \*\npublic inline fun <K, V> FloatArray.associate(transform: (Float) -> Pair<K, V>): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/\*\*\n \* Returns a [Map] containing key-value pairs provided by [transform] function\n \* applied to elements of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original

array.\n \* \n \* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n \*\npublic inline fun <K, V> DoubleArray.associate(transform: (Double) -> Pair<K, V>): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/\*\*\n \* Returns a [Map] containing key-value pairs provided by [transform] function\n \* applied to elements of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n \*\npublic inline fun <K, V> BooleanArray.associate(transform: (Boolean) -> Pair<K, V>): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/\*\*\n \* Returns a [Map] containing key-value pairs

provided by [transform] function\n \* applied to elements of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitives\n

\*\npublic inline fun <K, V> CharArray.associate(transform: (Char) -> Pair<K, V>): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/\*\*\n \* Returns a [Map] containing the elements from the given array indexed by the key\n \* returned from [keySelector] function applied to each element.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n \*\npublic inline fun <T, K> Array<out T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, T>(capacity), keySelector)\n}\n\n/\*\*\n \* Returns a [Map] containing the elements from the given array indexed by the key\n \* returned from [keySelector] function applied to each element.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

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samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n *\npublic inline fun <K>
ByteArray.associateBy(keySelector: (Byte) -> K): Map<K, Byte> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, Byte>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned
from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key returned
by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of
the original array.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*\npublic inline fun <K> ShortArray.associateBy(keySelector: (Short) -> K): Map<K, Short> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, Short>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*\npublic inline fun <K> IntArray.associateBy(keySelector: (Int) -> K): Map<K, Int> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, Int>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n *\npublic inline fun <K>
LongArray.associateBy(keySelector: (Long) -> K): Map<K, Long> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, Long>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same
key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry
iteration order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n *\npublic inline fun <K>
FloatArray.associateBy(keySelector: (Float) -> K): Map<K, Float> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, Float>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n
*\npublic inline fun <K> DoubleArray.associateBy(keySelector: (Double) -> K): Map<K, Double> {\n val
capacity = mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, Double>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the given array indexed by the key\n *
returned from [keySelector] function applied to each element.\n * \n * If any two elements would have the same key
returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves the entry iteration
order of the original array.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesBy\n *\npublic inline fun <K>
BooleanArray.associateBy(keySelector: (Boolean) -> K): Map<K, Boolean> {\n val capacity =
mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, Boolean>(capacity),
keySelector)\n}\n\n/**\n * Returns a [Map] containing the elements from the
given array indexed by the key\n * returned from [keySelector] function applied to each element.\n * \n * If any two
elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The

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keySelector, valueTransform)\n}\n\n/\*\*\n

\* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n \* \n\npublic inline fun <K, V> DoubleArray.associateBy(keySelector: (Double) -> K, valueTransform: (Double) -> V): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K,

V>(capacity), keySelector, valueTransform)\n}\n\n/\*\*\n \* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n

\* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n \* \n\npublic inline fun <K, V> BooleanArray.associateBy(keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): Map<K, V> {\n val capacity = mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K,

V>(capacity), keySelector, valueTransform)\n}\n\n/\*\*\n \* Returns a [Map] containing the values provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given array.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByWithValueTransform\n \* \n\npublic inline fun <K, V> CharArray.associateBy(keySelector:

(Char) -> K, valueTransform: (Char) -> V): Map<K, V> {\n val capacity =

mapCapacity(size).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function applied to each element of the given array\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n \* \n\npublic inline fun <T, K, M : MutableMap<in K, in T>> Array<out T>.associateByTo(destination: M, keySelector: (T) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector]

function applied to each element of the given array\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n \* \n\npublic inline fun <K, M : MutableMap<in K, in Byte>> ByteArray.associateByTo(destination: M, keySelector: (Byte) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function applied to each element of the given array\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n \* \n\npublic inline fun <K, M : MutableMap<in K, in Short>> ShortArray.associateByTo(destination: M, keySelector: (Short) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function applied to each element of the given array\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n \* \n\npublic inline fun <K, M : MutableMap<in K, in Int>> IntArray.associateByTo(destination: M, keySelector: (Int) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function applied to each element of the given array\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample

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samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n \* \n\npublic inline fun <K, M : MutableMap<in K, in Int>> IntArray.associateByTo(destination: M, keySelector: (Int) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs,\n \* where key is provided by the [keySelector] function applied to each element of the given array\n \* and value is the element itself.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample

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destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where
key is provided by the [keySelector] function applied to each element of the given array\n * and value is the
element itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets
added to the map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <K, M : MutableMap<in K, in Long>> LongArray.associateByTo(destination: M, keySelector:
(Long) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is
provided by the [keySelector] function applied to each element of the given array\n * and value is the element
itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the
map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <K, M : MutableMap<in K, in Float>> FloatArray.associateByTo(destination: M, keySelector:
(Float) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is
provided by the [keySelector] function applied to each element of the given array\n * and value is the element
itself.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added to the
map.\n * \n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <K, M : MutableMap<in K, in Double>> DoubleArray.associateByTo(destination: M, keySelector:
(Double) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function applied to each element of the
given array\n * and value is the element itself.\n * \n * If any two elements would have the same key returned by
[keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <K, M :
MutableMap<in K, in Boolean>> BooleanArray.associateByTo(destination: M, keySelector: (Boolean) -> K): M {\n
for (element in this) {\n destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n
* Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function applied to each element of the given array\n * and value is the element itself.\n * \n * If any
two elements would have the same key returned by [keySelector] the last one gets added to the map.\n * \n *
@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <K, M : MutableMap<in K, in Char>> CharArray.associateByTo(destination: M, keySelector:
(Char) -> K): M {\n for (element in this) {\n destination.put(keySelector(element), element)\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs,\n * where key is
provided by the [keySelector] function and\n * and value is provided by the [valueTransform] function applied to
elements of the given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last
one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <T, K, V, M : MutableMap<in K, in V>> Array<out T>.associateByTo(destination: M, keySelector: (T) -
> K, valueTransform: (T) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByTo\n
*/\npublic inline fun <K, V, M : MutableMap<in K, in V>> ByteArray.associateByTo(destination: M, keySelector: (Byte) ->
K, valueTransform: (Byte) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by

```

the [valueTransform] function applied to elements of the given array.\n \* \n \* If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n \* \n \* @sample

```

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> ShortArray.associateByTo(destination: M, keySelector: (Short) ->
K, valueTransform: (Short) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n
*/\npublic inline fun <K, V, M : MutableMap<in K, in V>> IntArray.associateByTo(destination: M, keySelector:
(Int) -> K, valueTransform: (Int) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is provided by
the [valueTransform] function applied to elements of the given array.\n * \n * If any two elements would have the
same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n
*/\npublic
inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateByTo(destination: M, keySelector: (Long) ->
K, valueTransform: (Long) -> V): M {\n for (element in this)
{\n destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/**\n *
Populates and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the
[keySelector] function and\n * and value is provided by the [valueTransform] function applied to elements of the
given array.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets added
to the map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateByTo(destination: M, keySelector: (Float) ->
K, valueTransform: (Float) -> V): M {\n for (element in this) {\n destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the [destination] mutable
map with key-value pairs,\n * where key is provided by the [keySelector]
function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n *
\n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n
*/\npublic inline fun <K, V, M : MutableMap<in K, in V>> DoubleArray.associateByTo(destination: M,
keySelector: (Double) -> K, valueTransform: (Double) -> V): M {\n for (element in this) {\n
destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the
map.\n * \n * @sample
samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n */\npublic
inline fun <K, V, M : MutableMap<in K, in V>> BooleanArray.associateByTo(destination: M, keySelector:
(Boolean) -> K, valueTransform: (Boolean) -> V): M {\n for (element in this) {\n
destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
function and\n * and value is provided by the [valueTransform] function applied to elements of the given array.\n *
\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n *
\n * @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesByToWithValueTransform\n
*/\npublic inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateByTo(destination: M, keySelector:

```

(Char)

-> K, valueTransform: (Char) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <T, K, V, M : MutableMap<in K, in V>> Array<out T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets

added to the map.\n \* \n \* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <K, V, M : MutableMap<in K, in V>> ByteArray.associateTo(destination: M, transform: (Byte) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <K, V, M : MutableMap<in K, in V>> ShortArray.associateTo(destination: M, transform: (Short) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with

key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <K, V, M : MutableMap<in K, in V>> IntArray.associateTo(destination: M, transform: (Int) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <K, V, M : MutableMap<in K, in V>> LongArray.associateTo(destination: M, transform: (Long) -> Pair<K, V>): M {\n

for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <K, V, M : MutableMap<in K, in V>> FloatArray.associateTo(destination: M, transform: (Float) -> Pair<K, V>): M {\n

for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <K, V, M : MutableMap<in K, in V>> DoubleArray.associateTo(destination: M, transform: (Double) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each element of the given array.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample

samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo\n\n\*/\n\npublic inline fun <K, V, M : MutableMap<in K, in V>> BooleanArray.associateTo(destination: M, transform: (Boolean) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Populates

and returns the [destination] mutable map with key-value pairs provided by [transform] function applied to each element of the given array.

If any of two pairs would have the same key the last one gets added to the map.

`@sample samples.collections.Arrays.Transformations.associateArrayOfPrimitivesTo`

```

public inline fun <K, V, M : MutableMap<in K, in V>> CharArray.associateTo(destination: M, transform: (Char) -> Pair<K, V>): M {
 for (element in this) {
 destination += transform(element)
 }
 return destination
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original array.

`@sample samples.collections.Collections.Transformations.associateWith`

```

@SinceKotlin("1.4")
public inline fun <K, V> Array<out K>.associateWith(valueSelector: (K) -> V): Map<K, V> {
 val result = LinkedHashMap<K, V>(mapCapacity(size).coerceAtLeast(16))
 return associateWithTo(result, valueSelector)
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original array.

`@sample samples.collections.Collections.Transformations.associateWith`

```

@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V> ByteArray.associateWith(valueSelector: (Byte) -> V): Map<Byte, V> {
 val result = LinkedHashMap<Byte, V>(mapCapacity(size).coerceAtLeast(16))
 return associateWithTo(result, valueSelector)
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original array.

`@sample samples.collections.Collections.Transformations.associateWith`

```

@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V> ShortArray.associateWith(valueSelector: (Short) -> V): Map<Short, V> {
 val result = LinkedHashMap<Short, V>(mapCapacity(size).coerceAtLeast(16))
 return associateWithTo(result, valueSelector)
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original array.

`@sample samples.collections.Collections.Transformations.associateWith`

```

@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V> IntArray.associateWith(valueSelector: (Int) -> V): Map<Int, V> {
 val result = LinkedHashMap<Int, V>(mapCapacity(size).coerceAtLeast(16))
 return associateWithTo(result, valueSelector)
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original array.

`@sample samples.collections.Collections.Transformations.associateWith`

```

@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V> LongArray.associateWith(valueSelector: (Long) -> V): Map<Long, V> {
 val result = LinkedHashMap<Long, V>(mapCapacity(size).coerceAtLeast(16))
 return associateWithTo(result, valueSelector)
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original array.

`@sample samples.collections.Collections.Transformations.associateWith`

```

@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <V> FloatArray.associateWith(valueSelector: (Float) -> V): Map<Float, V> {
 val result = LinkedHashMap<Float, V>(mapCapacity(size).coerceAtLeast(16))
 return associateWithTo(result, valueSelector)
}

```

Returns a [Map] where keys are elements from the given array and values are produced by the [valueSelector] function applied to each element.

If any two elements are equal, the last one gets added to the map.

The returned map preserves the entry iteration order of the original array.



applied to each element.\n \* \n \* If any two elements are equal, the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.associateWith\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
DoubleArray.associateWith(valueSelector:
(Double) -> V): Map<Double, V> {\n val result = LinkedHashMap<Double,
V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n * @sample samples.collections.Collections.Transformations.associateWith\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
BooleanArray.associateWith(valueSelector: (Boolean) -> V): Map<Boolean, V> {\n val result =
LinkedHashMap<Boolean, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to
each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map
preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V>
CharArray.associateWith(valueSelector: (Char) -> V): Map<Char, V> {\n val result = LinkedHashMap<Char,
V>(mapCapacity(size).coerceAtMost(128)).coerceAtLeast(16))\n return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each
element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function
applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n *
@sample samples.collections.Collections.Transformations.associateWithTo\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline
fun <K, V, M : MutableMap<in K, in V>> Array<out K>.associateWithTo(destination: M, valueSelector: (K) ->
V): M {\n for (element in this) {\n destination.put(element, valueSelector(element))\n }\n return
destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each element
of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function applied
to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n *
@sample samples.collections.Collections.Transformations.associateWithTo\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Byte, in V>>
ByteArray.associateWithTo(destination: M, valueSelector: (Byte) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the
[destination]
mutable map with key-value pairs for each element of the given array,\n * where key is the element itself and value
is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one
overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Short, in V>>
ShortArray.associateWithTo(destination: M, valueSelector: (Short) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are
equal, the last one overwrites the former value in the map.\n * \n *
```

```

@sample samples.collections.Collections.Transformations.associateWithTo
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Int, in V>>
IntArray.associateWithTo(destination: M, valueSelector: (Int) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are
equal, the last one overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Long, in V>>
LongArray.associateWithTo(destination: M, valueSelector: (Long) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Populates and
returns the [destination] mutable map with key-value pairs for each element of the given array,\n * where key is the
element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements
are equal, the last one overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Float, in V>>
FloatArray.associateWithTo(destination: M, valueSelector: (Float) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector]
function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the
map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Double, in V>>
DoubleArray.associateWithTo(destination: M, valueSelector: (Double) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs for each element of the given array,\n * where key is the element
itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements are
equal, the last one overwrites the former value in the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateWithTo
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline
fun <V, M : MutableMap<in Boolean, in V>> BooleanArray.associateWithTo(destination: M, valueSelector:
(Boolean) -> V): M {\n for (element in this) {\n destination.put(element, valueSelector(element))\n }\n
return destination\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs for each
element of the given array,\n * where key is the element itself and value is provided by the [valueSelector] function
applied to that key.\n * \n * If any two elements are equal, the last one overwrites the former value in the map.\n * \n
* @sample samples.collections.Collections.Transformations.associateWithTo
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <V, M : MutableMap<in Char, in V>>
CharArray.associateWithTo(destination: M, valueSelector: (Char) -> V): M {\n for (element in this) {\n
destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n * Appends all elements to
the given
[destination] collection.\n */\npublic fun <T, C : MutableCollection<in T>> Array<out T>.toCollection(destination:
C): C {\n for (item in this) {\n destination.add(item)\n }\n return destination\n}\n\n/**\n * Appends all
elements to the given [destination] collection.\n */\npublic fun <C : MutableCollection<in Byte>>
ByteArray.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n }\n return
destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n */\npublic fun <C :
MutableCollection<in Short>> ShortArray.toCollection(destination: C): C {\n for (item in this) {\n
destination.add(item)\n }\n return destination\n}\n\n/**\n * Appends all elements to the given [destination]
collection.\n */\npublic fun <C : MutableCollection<in Int>> IntArray.toCollection(destination: C): C {\n for

```

```

(item in this) {\n destination.add(item)\n } \n return destination\n}\n\n/**\n * Appends
all elements to the given [destination] collection.\n */\npublic fun <C : MutableCollection<in Long>>
LongArray.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n } \n return
destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n */\npublic fun <C :
MutableCollection<in Float>> FloatArray.toCollection(destination: C): C {\n for (item in this) {\n
destination.add(item)\n } \n return destination\n}\n\n/**\n * Appends all elements to the given [destination]
collection.\n */\npublic fun <C : MutableCollection<in Double>> DoubleArray.toCollection(destination: C): C {\n
for (item in this) {\n destination.add(item)\n } \n return destination\n}\n\n/**\n * Appends all elements to the
given [destination] collection.\n */\npublic fun <C : MutableCollection<in Boolean>>
BooleanArray.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n } \n
return destination\n}\n\n/**\n * Appends all elements to the given [destination] collection.\n */\npublic fun <C :
MutableCollection<in Char>> CharArray.toCollection(destination: C): C {\n for (item in this) {\n
destination.add(item)\n } \n return destination\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun <T> Array<out T>.toHashSet(): HashSet<T> {\n return
toCollection(HashSet<T>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun ByteArray.toHashSet(): HashSet<Byte> {\n return
toCollection(HashSet<Byte>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun ShortArray.toHashSet(): HashSet<Short> {\n return
toCollection(HashSet<Short>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun IntArray.toHashSet(): HashSet<Int> {\n return
toCollection(HashSet<Int>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all
elements.\n */\npublic fun LongArray.toHashSet(): HashSet<Long> {\n return
toCollection(HashSet<Long>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun FloatArray.toHashSet(): HashSet<Float> {\n return
toCollection(HashSet<Float>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun DoubleArray.toHashSet(): HashSet<Double> {\n return
toCollection(HashSet<Double>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun BooleanArray.toHashSet(): HashSet<Boolean> {\n return
toCollection(HashSet<Boolean>(mapCapacity(size)))\n}\n\n/**\n * Returns a new [HashSet] of all elements.\n
*/\npublic fun CharArray.toHashSet(): HashSet<Char> {\n return
toCollection(HashSet<Char>(mapCapacity(size.coerceAtMost(128))))\n}\n\n/**\n * Returns a [List] containing all
elements.\n */\npublic fun <T> Array<out T>.toList(): List<T> {\n return when (size) {\n 0 -> emptyList()\n
1 -> listOf(this[0])\n else -> this.toMutableList()\n } \n}\n\n/**\n * Returns a [List] containing all
elements.\n */\npublic fun ByteArray.toList(): List<Byte> {\n return when (size) {\n 0 -> emptyList()\n
1 -> listOf(this[0])\n else -> this.toMutableList()\n } \n}\n\n/**\n * Returns a [List] containing all elements.\n
*/\npublic fun ShortArray.toList(): List<Short> {\n return when (size) {\n 0 -> emptyList()\n
1 -> listOf(this[0])\n else -> this.toMutableList()\n } \n}\n\n/**\n * Returns a [List] containing all elements.\n
*/\npublic fun IntArray.toList(): List<Int> {\n return when (size) {\n 0 -> emptyList()\n
1 -> listOf(this[0])\n else -> this.toMutableList()\n } \n}\n\n/**\n * Returns a [List] containing all elements.\n
*/\npublic fun LongArray.toList(): List<Long> {\n return when (size) {\n 0 -> emptyList()\n
1 -> listOf(this[0])\n else -> this.toMutableList()\n } \n}\n\n/**\n * Returns a [List] containing all elements.\n
*/\npublic fun FloatArray.toList(): List<Float> {\n
return when (size) {\n 0 -> emptyList()\n 1 -> listOf(this[0])\n else -> this.toMutableList()\n
}\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun DoubleArray.toList(): List<Double> {\n
return when (size) {\n 0 -> emptyList()\n 1 -> listOf(this[0])\n else -> this.toMutableList()\n
}\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun BooleanArray.toList(): List<Boolean> {\n
return when (size) {\n 0 -> emptyList()\n 1 -> listOf(this[0])\n else -> this.toMutableList()\n
}\n}\n\n/**\n * Returns a [List] containing all elements.\n */\npublic fun CharArray.toList(): List<Char> {\n

```

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return when (size) {\n 0 -> emptyList()\n 1 -> listOf(this[0])\n else -> this.toMutableList()\n}\n}\n\n/**\n * Returns a new [MutableList] filled\n * with all elements of this array.\n */\npublic fun <T> Array<out T>.toMutableList(): MutableList<T> {\n return\n ArrayList(this.asCollection())\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun ByteArray.toMutableList(): MutableList<Byte> {\n val list = ArrayList<Byte>(size)\n for (item\n in this) list.add(item)\n return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this\n * array.\n */\npublic fun ShortArray.toMutableList(): MutableList<Short> {\n val list = ArrayList<Short>(size)\n for (item in this) list.add(item)\n return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of\n * this array.\n */\npublic fun IntArray.toMutableList(): MutableList<Int> {\n val list = ArrayList<Int>(size)\n for\n (item in this) list.add(item)\n return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this\n * array.\n */\npublic fun LongArray.toMutableList(): MutableList<Long>\n{\n val list = ArrayList<Long>(size)\n for (item in this) list.add(item)\n return list\n}\n\n/**\n * Returns a\n * new [MutableList] filled with all elements of this array.\n */\npublic fun FloatArray.toMutableList():\nMutableList<Float> {\n val list = ArrayList<Float>(size)\n for (item in this) list.add(item)\n return\n list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun\nDoubleArray.toMutableList(): MutableList<Double> {\n val list = ArrayList<Double>(size)\n for (item in this)\n list.add(item)\n return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of this array.\n */\npublic fun\nBooleanArray.toMutableList(): MutableList<Boolean> {\n val list = ArrayList<Boolean>(size)\n for (item in this) list.add(item)\n return list\n}\n\n/**\n * Returns a new [MutableList] filled with all elements of\n * this array.\n */\npublic fun CharArray.toMutableList(): MutableList<Char> {\n val\n list = ArrayList<Char>(size)\n for (item in this) list.add(item)\n return list\n}\n\n/**\n * Returns a [Set] of all\n * elements.\n */\n * The returned set preserves the element iteration order of the original array.\n */\npublic fun <T>\nArray<out T>.toSet(): Set<T> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -\n > toCollection(LinkedHashSet<T>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the original array.\n */\npublic fun ByteArray.toSet():\nSet<Byte> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else ->\n toCollection(LinkedHashSet<Byte>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the original array.\n */\npublic fun ShortArray.toSet():\nSet<Short> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Short>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the original array.\n */\npublic fun IntArray.toSet(): Set<Int> {\n return when (size) {\n 0 -> emptySet()\n 1 ->\n setOf(this[0])\n else -> toCollection(LinkedHashSet<Int>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a\n * [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the original array.\n */\npublic fun LongArray.toSet(): Set<Long> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Long>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all\n * elements.\n */\n * The returned set preserves the element iteration order of the original array.\n */\npublic fun\nFloatArray.toSet(): Set<Float> {\n return when (size) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Float>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the\n * original array.\n */\npublic fun DoubleArray.toSet(): Set<Double> {\n return when (size) {\n 0 ->\n emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Double>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the\n * original array.\n */\npublic fun BooleanArray.toSet(): Set<Boolean> {\n return when (size) {\n 0 ->\n emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Boolean>(mapCapacity(size)))\n }\n}\n\n/**\n * Returns a [Set] of all elements.\n */\n * The returned set preserves the element iteration order of the\n * original array.\n */\npublic fun CharArray.toSet(): Set<Char> {\n

```



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@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ByteArray.flatMapIndexed(transform: (index: Int, Byte) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> ShortArray.flatMapIndexed(transform: (index: Int, Short) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> IntArray.flatMapIndexed(transform: (index: Int, Int) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> LongArray.flatMapIndexed(transform: (index: Int, Long) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(),
transform)\n}\n\n**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> FloatArray.flatMapIndexed(transform: (index: Int, Float) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.flatMapIndexed(transform: (index: Int, Double) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> BooleanArray.flatMapIndexed(transform: (index: Int, Boolean) -> Iterable<R>): List<R> {\n
return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single list of all elements yielded
from results of [transform] function being invoked
on each element\n * and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.flatMapIndexed(transform: (index: Int, Char) -> Iterable<R>): List<R> {\n return

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flatMapIndexedTo(ArrayList<R>(), transform)\n\n/**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedSequence")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R> Array<out T>.flatMapIndexed(transform:
(index: Int, T) -> Sequence<R>): List<R> {\n return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/**\n *
Appends all elements yielded from results of [transform] function being invoked on each element\n * and its index
in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> ByteArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Byte) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> ShortArray.flatMapIndexedTo(destination:
C, transform: (index: Int, Short) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list =
transform(index++, element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element\n * and its index in the original
array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> IntArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Int) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++, element)\n
 destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked
on each element\n * and its index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c inline fun <R, C : MutableCollection<in R>> LongArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Long) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c

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inline fun <R, C : MutableCollection<in R>> FloatArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Float) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <R, C : MutableCollection<in R>> DoubleArray.flatMapIndexedTo(destination: C, transform: (index:
Int, Double) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each element\n * and its
index in the original array, to the given [destination].\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <R, C : MutableCollection<in R>> BooleanArray.flatMapIndexedTo(destination: C, transform: (index:
Int, Boolean) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npublic
c
inline fun <R, C : MutableCollection<in R>> CharArray.flatMapIndexedTo(destination: C, transform: (index: Int,
Char) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n var index = 0\n for (element in this) {\n val list =
transform(index++, element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all
elements yielded from results of [transform] function being invoked on each element of original array, to the given
[destination].\n
*/\npublic inline fun <T, R, C : MutableCollection<in R>> Array<out T>.flatMapTo(destination: C,
transform: (T) -> Iterable<R>): C {\n for (element in this) {\n val list = transform(element)\n
destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n
*/\npublic inline
fun <R, C : MutableCollection<in R>> ByteArray.flatMapTo(destination: C, transform: (Byte) -> Iterable<R>): C
{\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n
*/\npublic inline
fun <R, C : MutableCollection<in R>> ShortArray.flatMapTo(destination: C, transform: (Short) -> Iterable<R>): C
{\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n
*/\npublic inline fun <R, C : MutableCollection<in R>>
IntArray.flatMapTo(destination: C, transform: (Int) -> Iterable<R>): C {\n for (element in this) {\n val list =
transform(element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements
yielded from results of [transform] function being invoked on each element of original array, to the given

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[destination].\n */\npublic inline fun <R, C : MutableCollection<in R>> LongArray.flatMapTo(destination:
 C, transform: (Long) -> Iterable<R>): C {\n for (element in this) {\n val list = transform(element)\n
 destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n */\npublic inline
fun <R, C : MutableCollection<in R>> FloatArray.flatMapTo(destination: C, transform: (Float) -> Iterable<R>): C
{\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>
DoubleArray.flatMapTo(destination: C, transform: (Double) -> Iterable<R>): C {\n for (element in this) {\n
val list = transform(element)\n
 destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element of original array, to the given [destination].\n */\npublic inline
fun <R, C : MutableCollection<in R>> BooleanArray.flatMapTo(destination: C, transform: (Boolean) ->
Iterable<R>): C {\n for (element in this) {\n val list = transform(element)\n destination.addAll(list)\n
 }\n return destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being
invoked on each element of original array, to the given [destination].\n */\npublic inline fun <R, C :
MutableCollection<in R>> CharArray.flatMapTo(destination: C, transform: (Char) -> Iterable<R>): C {\n for
(element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked
on each element of original array, to the given [destination].\n */\n\n*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapSequenceTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Array<out T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C {\n for
(element in this) {\n val list = transform(element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Groups elements of the original array by the key returned by the given [keySelector]
function\n * applied to each element and returns a map where each group key is associated with a list of
corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced from the
original array.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun
<T, K> Array<out T>.groupBy(keySelector: (T) -> K): Map<K, List<T>>
{\n return groupByTo(LinkedHashMap<K, MutableList<T>>(), keySelector)\n}\n\n/**\n * Groups elements of
the original array by the key returned by the given [keySelector] function\n * applied to each element and returns a
map where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves
the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
ByteArray.groupBy(keySelector: (Byte) -> K): Map<K, List<Byte>> {\n return groupByTo(LinkedHashMap<K,
MutableList<Byte>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the
given [keySelector] function\n * applied to each element and returns a map where each group key is associated with
a list of corresponding elements.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
ShortArray.groupBy(keySelector: (Short) -> K): Map<K, List<Short>> {\n return
groupByTo(LinkedHashMap<K, MutableList<Short>>(), keySelector)\n}\n\n/**\n * Groups elements of the
original array by the key returned by the given [keySelector] function\n * applied to each element and returns a map
where each group key is associated with a list of corresponding elements.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\npublic inline fun <K>
IntArray.groupBy(keySelector: (Int) -> K): Map<K, List<Int>> {\n return groupByTo(LinkedHashMap<K,
MutableList<Int>>(), keySelector)\n}\n\n/**\n * Groups elements of the original array by the key returned by the

```

given [keySelector] function\n \* applied to each element and returns a map where each group key is associated with a

a

list of corresponding elements.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.groupBy\n \*/\npublic inline fun <K> LongArray.groupBy(keySelector: (Long) -> K): Map<K, List<Long>> {\n return groupByTo(LinkedHashMap<K, MutableList<Long>>(), keySelector)\n}\n\n/\*\*\n \* Groups elements of the original array by the key returned by the given [keySelector] function\n \* applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.groupBy\n \*/\npublic inline fun <K> FloatArray.groupBy(keySelector: (Float) -> K): Map<K, List<Float>> {\n return groupByTo(LinkedHashMap<K, MutableList<Float>>(), keySelector)\n}\n\n/\*\*\n \* Groups elements of the original array by the key returned by the given [keySelector] function\n \* applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.groupBy\n \*/\npublic inline fun <K> DoubleArray.groupBy(keySelector: (Double) -> K): Map<K, List<Double>> {\n return groupByTo(LinkedHashMap<K, MutableList<Double>>(), keySelector)\n}\n\n/\*\*\n \* Groups elements of the original array by the key returned by the given [keySelector] function\n \* applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.groupBy\n \*/\npublic inline fun <K> BooleanArray.groupBy(keySelector: (Boolean) -> K): Map<K, List<Boolean>> {\n return groupByTo(LinkedHashMap<K, MutableList<Boolean>>(), keySelector)\n}\n\n/\*\*\n \* Groups elements of the original array by the key returned by the given [keySelector] function\n \* applied to each element and returns a map where each group key is associated with a list of corresponding elements.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.groupBy\n \*/\npublic inline fun <K> CharArray.groupBy(keySelector: (Char) -> K): Map<K, List<Char>> {\n return groupByTo(LinkedHashMap<K, MutableList<Char>>(), keySelector)\n}\n\n/\*\*\n \* Groups values returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and returns a map where each group key is associated with a list of corresponding values.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n \*/\npublic inline fun <T, K, V> Array<out T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> {\n return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/\*\*\n \* Groups values returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and returns a map where each group key is associated with a list of corresponding values.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n \*/\npublic inline fun <K, V> ByteArray.groupBy(keySelector: (Byte) -> K, valueTransform: (Byte) -> V): Map<K, List<V>> {\n return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/\*\*\n \* Groups values returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and returns a map where each group key is associated with a list of corresponding values.\n \* \n \* The returned map preserves the entry iteration order of the keys produced from the original array.\n \* \n \* @sample

```

samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
ShortArray.groupBy(keySelector: (Short) -> K, valueTransform: (Short) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n
* and returns a map where each group key is associated with a list of corresponding values.\n * \n * The returned
map preserves the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
IntArray.groupBy(keySelector: (Int) -> K, valueTransform: (Int) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the original array\n * by the key returned by
the given [keySelector] function applied to the element\n * and returns a map where each group key is associated
with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys
produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic
inline fun <K, V> LongArray.groupBy(keySelector: (Long) -> K, valueTransform: (Long) -> V): Map<K,
List<V>> {\n return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of
the original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns
a map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves
the entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
FloatArray.groupBy(keySelector: (Float) -> K, valueTransform: (Float) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups values
returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and returns a
map where each group key is associated with a list of corresponding values.\n * \n * The returned map preserves the
entry iteration order of the keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
DoubleArray.groupBy(keySelector: (Double) -> K, valueTransform: (Double) -> V): Map<K, List<V>> {\n
return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n * Groups
values returned by the [valueTransform] function applied to each element of the original array\n * by the key
returned by the given [keySelector] function applied to the element\n * and returns a map where each group key is
associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the
keys produced from the original array.\n
* \n * @sample samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun
<K, V> BooleanArray.groupBy(keySelector: (Boolean) -> K, valueTransform: (Boolean) -> V): Map<K, List<V>>
{\n return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n *
Groups values returned by the [valueTransform] function applied to each element of the original array\n * by the
key returned by the given [keySelector] function applied to the element\n * and returns a map where each group key
is associated with a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the
keys produced from the original array.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeyAndValues\n *\npublic inline fun <K, V>
CharArray.groupBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, List<V>> {\n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)\n}\n\n/**\n
* Groups elements of the original array by the key returned by the given [keySelector] function\n * applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.\n * \n *
@return The [destination] map.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n

```

```

*public inline fun <T, K, M : MutableMap<in K, MutableList<T>>> Array<out T>.groupByTo(destination: M,
keySelector: (T) -> K): M {
 for (element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) { ArrayList<T>() }
 list.add(element)
 }
 return destination
}

Groups elements of the original array by the key returned by the given [keySelector] function applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.

@return The [destination] map.

@sample samples.collections.Collections.Transformations.groupBy

*public inline fun <K, M : MutableMap<in K, MutableList<Byte>>> ByteArray.groupByTo(destination: M,
keySelector: (Byte) -> K): M {
 for (element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) { ArrayList<Byte>() }
 list.add(element)
 }
 return destination
}

Groups elements of the original array by the key returned by the given [keySelector] function applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.

@return The [destination] map.

@sample samples.collections.Collections.Transformations.groupBy

*public inline fun <K, M : MutableMap<in K, MutableList<Short>>> ShortArray.groupByTo(destination: M,
keySelector: (Short) -> K): M {
 for (element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) { ArrayList<Short>() }
 list.add(element)
 }
 return destination
}

Groups elements of the original array by the key returned by the given [keySelector] function applied to each
element and puts to the [destination] map each group key associated with
a list of corresponding elements.

@return The [destination] map.

@sample samples.collections.Collections.Transformations.groupBy

*public inline fun <K, M : MutableMap<in K, MutableList<Int>>> IntArray.groupByTo(destination: M, keySelector: (Int) -> K): M {
 for (element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) { ArrayList<Int>() }
 list.add(element)
 }
 return destination
}

Groups elements of the original array by the key returned
by the given [keySelector] function applied to each element and puts to the [destination] map each group key
associated with a list of corresponding elements.

@return The [destination] map.

@sample samples.collections.Collections.Transformations.groupBy

*public inline fun <K, M :
MutableMap<in K, MutableList<Long>>> LongArray.groupByTo(destination: M, keySelector: (Long) -> K): M
{
 for (element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) {
 ArrayList<Long>()
 }
 list.add(element)
 }
 return destination
}

Groups elements of the
original array by the key returned by the given [keySelector] function applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.

@return The
[destination] map.

@sample samples.collections.Collections.Transformations.groupBy

*public inline
fun <K, M : MutableMap<in K, MutableList<Float>>> FloatArray.groupByTo(destination: M, keySelector: (Float)
-> K): M {
 for (element in this) {
 val key = keySelector(element)
 val list =
 destination.getOrPut(key) {
 ArrayList<Float>()
 }
 list.add(element)
 }
 return destination
}

Groups elements of the
original array by the key returned by the given [keySelector] function applied to each element and puts to the
[destination] map each group key associated with a list of corresponding elements.

@return The
[destination] map.

@sample samples.collections.Collections.Transformations.groupBy

*public inline
fun <K, M : MutableMap<in K, MutableList<Double>>> DoubleArray.groupByTo(destination: M, keySelector:
(Double) -> K): M {
 for (element in this) {
 val key = keySelector(element)
 val list =
 destination.getOrPut(key) {
 ArrayList<Double>()
 }
 list.add(element)
 }
 return destination
}

Groups elements of the original array by the key returned by the given [keySelector] function applied to each
element and puts to the [destination] map each group key associated with a list of corresponding elements.

@return The [destination] map.

@sample
samples.collections.Collections.Transformations.groupBy

*public inline fun <K, M : MutableMap<in K,
MutableList<Boolean>>> BooleanArray.groupByTo(destination: M, keySelector: (Boolean) -> K): M {
 for
(element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) {
 ArrayList<Boolean>()
 }
 list.add(element)
 }
 return destination
}

Groups elements of the

```



```

map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n * \n public
inline fun <K, V, M : MutableMap<in K, MutableList<V>>> FloatArray.groupByTo(destination: M, keySelector:
(Float) -> K, valueTransform: (Float) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n
 val list = destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function
applied to each element of the original array\n * by the key returned by the given [keySelector] function applied to
the element\n * and puts to the [destination] map each group key associated with a list of corresponding values.\n *
\n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n * \n public inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> DoubleArray.groupByTo(destination: M, keySelector: (Double) -> K,
valueTransform: (Double) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list
= destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated
with a list of corresponding values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n * \n public inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> BooleanArray.groupByTo(destination: M, keySelector: (Boolean) -> K,
valueTransform: (Boolean) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list
= destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return
destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function applied to each element of the
original array\n * by the key returned by the given [keySelector] function applied to the element\n * and puts to the
[destination] map each group key associated with a list of corresponding values.\n * \n * @return The [destination]
map.\n * \n * @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n * \n public
inline fun <K,
V, M : MutableMap<in K, MutableList<V>>> CharArray.groupByTo(destination: M, keySelector: (Char) -> K,
valueTransform: (Char) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return
destination\n}\n\n/**\n * Creates a [Grouping] source from an array to be used later with one of group-and-fold
operations\n * using the specified [keySelector] function to extract a key from each element.\n * \n * @sample
samples.collections.Grouping.groupingByEachCount\n * \n @SinceKotlin("1.1")\n public inline fun <T, K>
Array<out T>.groupingBy(crossinline keySelector: (T) -> K): Grouping<T, K> {\n return object : Grouping<T,
K> {\n override fun sourceIterator(): Iterator<T> = this@groupingBy.iterator()\n override fun
keyOf(element: T): K = keySelector(element)\n }\n}\n\n/**\n * Returns a list containing the results of applying
the given
[transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n * \n public inline fun <T, R> Array<out T>.map(transform:
(T) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n * \n public inline fun <R> ByteArray.map(transform: (Byte)
-> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n * \n public inline fun <R> ShortArray.map(transform:
(Short) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the
given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n * \n public inline fun <R> IntArray.map(transform: (Int) ->
R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results

```

of applying the given [transform] function\n \* to each element in the original array.\n \* \n \* @sample

```

samples.collections.Collections.Transformations.map\n *^\npublic inline fun <R> LongArray.map(transform:
(Long) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^\npublic inline fun <R> FloatArray.map(transform: (Float)
-> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the
results of applying the
given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^\npublic inline fun <R> DoubleArray.map(transform:
(Double) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n *^\npublic inline fun <R> BooleanArray.map(transform:
(Boolean) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list
containing the results of applying the given [transform] function\n * to each element in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.map\n *^\npublic inline fun <R>
CharArray.map(transform: (Char) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n *
Returns a list containing the results of applying
the given [transform] function\n * to each element and its index in the original array.\n * @param [transform]
function that takes the index of an element and the element itself\n * and returns the result of the transform applied
to the element.\n *^\npublic inline fun <T, R> Array<out T>.mapIndexed(transform: (index: Int, T) -> R): List<R>
{\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of
applying the given [transform] function\n * to each element and its index in the original array.\n * @param
[transform] function that takes the index of an element and the element itself\n * and returns the result of the
transform applied to the element.\n *^\npublic inline fun <R> ByteArray.mapIndexed(transform: (index: Int, Byte) -
> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element and its index in
the original array.\n * @param [transform] function that takes the index of an element and the element itself\n * and
returns the result of the transform applied to the element.\n *^\npublic inline fun <R>
ShortArray.mapIndexed(transform: (index: Int, Short) -> R): List<R> {\n return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n *^\npublic inline fun <R> IntArray.mapIndexed(transform: (index: Int, Int) -> R): List<R> {\n return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of
an element and the element itself\n * and returns the result of the transform applied to the element.\n *^\npublic
inline fun <R> LongArray.mapIndexed(transform: (index: Int, Long) -> R): List<R> {\n return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n *^\npublic inline fun <R> FloatArray.mapIndexed(transform: (index: Int, Float) -> R): List<R> {\n
return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying
the given [transform] function\n * to each element and its index in the original array.\n * @param [transform]
function that takes the index of an element and the element itself\n * and returns the result of the transform
applied to the element.\n *^\npublic inline fun <R> DoubleArray.mapIndexed(transform: (index: Int, Double) -> R):
List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the
results of applying the given [transform] function\n * to each element and its index in the original array.\n *

```

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R> BooleanArray.mapIndexed(transform: (index: Int, Boolean) -> R): List<R> {
 return mapIndexedTo(ArrayList<R>(size), transform)
}

```

\* Returns a list containing the results of applying the given [transform] function to each element and its index in the original array.

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R> CharArray.mapIndexed(transform: (index: Int, Char) -> R): List<R> {
 return mapIndexedTo(ArrayList<R>(size), transform)
}

```

\* Returns a list containing only the non-null results of applying the given [transform] function to each element and its index in the original array.

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <T, R : Any> Array<out T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): List<R> {
 return mapIndexedNotNullTo(ArrayList<R>(), transform)
}

```

\* Applies the given [transform] function to each element and its index in the original array and appends only the non-null results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <T, R : Any, C : MutableCollection<in R>> Array<out T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {
 forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }
 return destination
}

```

\* Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <T, R, C : MutableCollection<in R>> Array<out T>.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

```

\* Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>> ByteArray.mapIndexedTo(destination: C, transform: (index: Int, Byte) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

```

\* Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>> ShortArray.mapIndexedTo(destination: C, transform: (index: Int, Short) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

```

\* Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>> IntArray.mapIndexedTo(destination: C, transform: (index: Int, Int) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

```

\* Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>> LongArray.mapIndexedTo(destination: C, transform: (index: Int, Long) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

```

\* Applies the given [transform] function to each element and its index in the original array and appends the results to the given [destination].

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

```

public inline fun <R, C : MutableCollection<in R>> FloatArray.mapIndexedTo(destination: C, transform: (index: Int, Float) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

```

\* Applies the given



```

[transform] function to each element and its index in the original array\n * and appends the results to the given
[destination].\n * @param [transform] function that takes the index of an element and the element itself\n * and
returns the result of the transform applied to the element.\n *^\npublic inline
fun <R, C : MutableCollection<in R>> DoubleArray.mapIndexedTo(destination: C, transform: (index: Int, Double)
-> R): C {\n var index = 0\n for (item in this)\n destination.add(transform(index++, item))\n return
destination}\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n
* and appends the results to the given [destination].\n * @param [transform] function that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n *^\npublic inline
fun <R, C : MutableCollection<in R>> BooleanArray.mapIndexedTo(destination: C, transform: (index: Int,
Boolean) -> R): C {\n var index = 0\n for (item in this)\n destination.add(transform(index++, item))\n
return destination}\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original
array\n * and appends the results to the given [destination].\n * @param [transform]
function that takes the index of an element and the element itself\n * and returns the result of the transform applied
to the element.\n *^\npublic inline fun <R, C : MutableCollection<in R>> CharArray.mapIndexedTo(destination: C,
transform: (index: Int, Char) -> R): C {\n var index = 0\n for (item in this)\n
destination.add(transform(index++, item))\n return destination}\n}\n\n/**\n * Returns a list containing only the
non-null results of applying the given [transform] function\n * to each element in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.mapNotNull\n *^\npublic inline fun <T, R : Any>
Array<out T>.mapNotNull(transform: (T) -> R?): List<R> {\n return mapNotNullTo(ArrayList<R>(),
transform)\n}\n}\n\n/**\n * Applies the given [transform] function to each element in the original array\n * and
appends only the non-null results to the given [destination].\n *^\npublic inline fun <T, R : Any, C :
MutableCollection<in R>>
Array<out T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {\n forEach { element ->
transform(element)?.let { destination.add(it) } }\n return destination}\n}\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results to the given [destination].\n *^\npublic
inline fun <T, R, C : MutableCollection<in R>> Array<out T>.mapTo(destination: C, transform: (T) -> R): C {\n
for (item in this)\n destination.add(transform(item))\n return destination}\n}\n}\n\n/**\n * Applies the given
[transform] function to each element of the original array\n * and appends the results to the given [destination].\n
*\n *^\npublic inline fun <R, C : MutableCollection<in R>> ByteArray.mapTo(destination: C, transform: (Byte) -> R):
C {\n for (item in this)\n destination.add(transform(item))\n return destination}\n}\n}\n\n/**\n * Applies the
given [transform] function to each element of the original array\n * and appends the results
to the given [destination].\n *^\npublic inline fun <R, C : MutableCollection<in R>>
ShortArray.mapTo(destination: C, transform: (Short) -> R): C {\n for (item in this)\n
destination.add(transform(item))\n return destination}\n}\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n *^\npublic inline fun <R, C :
MutableCollection<in R>> IntArray.mapTo(destination: C, transform: (Int) -> R): C {\n for (item in this)\n
destination.add(transform(item))\n return destination}\n}\n}\n\n/**\n * Applies the given [transform] function to each
element of the original array\n * and appends the results to the given [destination].\n *^\npublic inline fun <R, C :
MutableCollection<in R>> LongArray.mapTo(destination: C, transform: (Long) -> R): C {\n for (item in this)\n
destination.add(transform(item))\n return destination}\n}\n}\n\n/**\n * Applies the given [transform] function
to each element of the original array\n * and appends the results to the given [destination].\n *^\npublic inline fun
<R, C : MutableCollection<in R>> FloatArray.mapTo(destination: C, transform: (Float) -> R): C {\n for (item in
this)\n destination.add(transform(item))\n return destination}\n}\n}\n\n/**\n * Applies the given [transform]
function to each element of the original array\n * and appends the results to the given [destination].\n *^\npublic
inline fun <R, C : MutableCollection<in R>> DoubleArray.mapTo(destination: C, transform: (Double) -> R): C {\n
for (item in this)\n destination.add(transform(item))\n return destination}\n}\n}\n\n/**\n * Applies the given
[transform] function to each element of the original array\n * and appends the results to the given [destination].\n
*\n *^\npublic inline fun <R, C : MutableCollection<in R>> BooleanArray.mapTo(destination: C, transform: (Boolean)

```

```

-> R): C {\n for (item in this)\n destination.add(transform(item))\n }\n return destination\n}\n\n/**\n * Applies the given [transform] function to each element of the original array\n * and appends the results to the given [destination].\n */\npublic inline fun <R, C : MutableCollection<in R>>\n CharArray.mapTo(destination: C, transform: (Char) -> R): C {\n for (item in this)\n destination.add(transform(item))\n }\n return destination\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun <T> Array<out T>.withIndex(): Iterable<IndexedValue<T>> {\n return IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun ByteArray.withIndex():\n Iterable<IndexedValue<Byte>> {\n return IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun ShortArray.withIndex(): Iterable<IndexedValue<Short>> {\n return\n IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun\n IntArray.withIndex(): Iterable<IndexedValue<Int>> {\n return IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun LongArray.withIndex():\n Iterable<IndexedValue<Long>> {\n return IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun FloatArray.withIndex(): Iterable<IndexedValue<Float>> {\n return IndexingIterable {\n iterator()\n }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun DoubleArray.withIndex():\n Iterable<IndexedValue<Double>> {\n return IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun BooleanArray.withIndex(): Iterable<IndexedValue<Boolean>> {\n return\n IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a lazy [Iterable] that wraps each element of the original array\n * into an [IndexedValue] containing the index of that element and the element\n * itself.\n */\npublic fun\n CharArray.withIndex(): Iterable<IndexedValue<Char>> {\n return IndexingIterable {\n iterator() }\n}\n\n/**\n * Returns a list containing only distinct elements from the given array.\n * \n * Among equal elements of the given array, only the first one will be present in the resulting list.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample\n samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun <T> Array<out T>.distinct(): List<T> {\n return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample\n samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun\n ByteArray.distinct(): List<Byte> {\n return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same order as they were in\n * \n * the source array.\n * \n * @sample\n samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun\n ShortArray.distinct(): List<Short> {\n return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample\n samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun\n IntArray.distinct(): List<Int> {\n return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only distinct elements from the given array.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample\n samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic fun\n LongArray.distinct(): List<Long> {\n return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing

```

only distinct elements from the

given array.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample samples.collections.Collections.Transformations.distinctAndDistinctBy  
FloatArray.distinct(): List<Float> {  
return this.toMutableSet().toList()  
}  
Returns a list containing only distinct elements from the given array.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample

samples.collections.Collections.Transformations.distinctAndDistinctBy  
public fun DoubleArray.distinct(): List<Double> {  
return this.toMutableSet().toList()  
}  
Returns a list containing only distinct elements from the given array.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample samples.collections.Collections.Transformations.distinctAndDistinctBy  
public fun

BooleanArray.distinct(): List<Boolean> {  
return this.toMutableSet().toList()  
}  
Returns a list containing only distinct elements from the given array.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample samples.collections.Collections.Transformations.distinctAndDistinctBy  
public fun CharArray.distinct(): List<Char> {  
return this.toMutableSet().toList()  
}  
Returns a list containing only elements from the given array having distinct keys returned by the given [selector] function.  
Among elements of the given array with equal keys, only the first one will be present in the resulting list.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample

samples.collections.Collections.Transformations.distinctAndDistinctBy  
public inline fun <T, K> Array<out T>.distinctBy(selector: (T) -> K): List<T> {  
val set = HashSet<K>()  
val list = ArrayList<T>()  
for (e in this) {  
val key = selector(e)  
if (set.add(key))  
list.add(e)  
}  
return list  
}  
Returns a list containing only elements from the given array having distinct keys returned by the given [selector] function.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample samples.collections.Collections.Transformations.distinctAndDistinctBy  
public inline fun <K>

ByteArray.distinctBy(selector: (Byte) -> K): List<Byte> {  
val set = HashSet<K>()  
val list = ArrayList<Byte>()  
for (e in this) {  
val key = selector(e)  
if (set.add(key))  
list.add(e)  
}  
return list  
}  
Returns a list containing only elements from the given array having distinct keys returned by the given [selector] function.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample

samples.collections.Collections.Transformations.distinctAndDistinctBy  
public inline fun <K> ShortArray.distinctBy(selector: (Short) -> K): List<Short> {  
val set = HashSet<K>()  
val list = ArrayList<Short>()  
for (e in this) {  
val key = selector(e)  
if (set.add(key))  
list.add(e)  
}  
return list  
}  
Returns a list containing only elements from the given array having distinct keys returned by the given [selector] function.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample

samples.collections.Collections.Transformations.distinctAndDistinctBy  
public inline fun <K> IntArray.distinctBy(selector: (Int) -> K): List<Int> {  
val set = HashSet<K>()  
val list = ArrayList<Int>()  
for (e in this) {  
val key = selector(e)  
if (set.add(key))  
list.add(e)  
}  
return list  
}  
Returns a list containing only elements from

the given array having distinct keys returned by the given [selector] function.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample

samples.collections.Collections.Transformations.distinctAndDistinctBy  
public inline fun <K> LongArray.distinctBy(selector: (Long) -> K): List<Long> {  
val set = HashSet<K>()  
val list = ArrayList<Long>()  
for (e in this) {  
val key = selector(e)  
if (set.add(key))  
list.add(e)  
}  
return list  
}  
Returns a list containing only elements from the given array having distinct keys returned by the given [selector] function.  
The elements in the resulting list are in the same order as they were in the source array.  
@sample

samples.collections.Collections.Transformations.distinctAndDistinctBy  
public inline fun <K>

```

FloatArray.distinctBy(selector: (Float) -> K): List<Float> {\n val set = HashSet<K>()\n val list = ArrayList<Float>()\n for (e in this) {\n val key = selector(e)\n if (set.add(key))\n list.add(e)\n }\n return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample\n * samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K>\nDoubleArray.distinctBy(selector: (Double) -> K): List<Double> {\n val set = HashSet<K>()\n val list = ArrayList<Double>()\n for (e in this) {\n val key = selector(e)\n if (set.add(key))\n list.add(e)\n }\n return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample\n * samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K>\nBooleanArray.distinctBy(selector: (Boolean) -> K): List<Boolean> {\n val set = HashSet<K>()\n val list = ArrayList<Boolean>()\n for (e in this) {\n val key = selector(e)\n if (set.add(key))\n list.add(e)\n }\n return list\n}\n\n/**\n * Returns a list containing only elements from the given array\n * having distinct keys returned by the given [selector] function.\n * \n * The elements in the resulting list are in the same order as they were in the source array.\n * \n * @sample\n * samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <K>\nCharArray.distinctBy(selector: (Char) -> K): List<Char> {\n val set = HashSet<K>()\n val list = ArrayList<Char>()\n for (e in this) {\n val key = selector(e)\n if (set.add(key))\n list.add(e)\n }\n return list\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\npublic infix fun <T>\nArray<out T>.intersect(other: Iterable<T>): Set<T> {\n val set = this.toMutableSet()\n set.retainAll(other)\n return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\npublic infix fun\nByteArray.intersect(other: Iterable<Byte>): Set<Byte> {\n val set = this.toMutableSet()\n set.retainAll(other)\n return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\npublic infix fun\nShortArray.intersect(other: Iterable<Short>): Set<Short> {\n val set = this.toMutableSet()\n set.retainAll(other)\n return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\npublic infix fun\nIntArray.intersect(other: Iterable<Int>): Set<Int> {\n val set = this.toMutableSet()\n set.retainAll(other)\n return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\npublic infix fun\nLongArray.intersect(other: Iterable<Long>): Set<Long> {\n val set = this.toMutableSet()\n set.retainAll(other)\n return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n * \n * The returned set preserves the element iteration order of the original array.\n * \n * To get a set containing all elements that are contained at least in one of these collections use [union].\n */\npublic infix fun\nFloatArray.intersect(other: Iterable<Float>): Set<Float> {\n val set = this.toMutableSet()\n set.retainAll(other)\n return set\n}\n\n/**\n * Returns a set containing all elements that are contained by both this array and the specified collection.\n */

```





elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \*  
\n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*  
\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of

the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*  
\n \* Returns a set containing all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*  
\n \* Returns a set containing

all distinct elements from both collections.\n \* \n \* The returned set preserves the element iteration order of the original array.\n \* Those elements of the [other] collection that are unique are iterated in the end\n \* in the order of the [other] collection.\n \* \n \* To get a set containing all elements that are contained in both collections use [intersect].\n \*  
\n \* Returns `true` if all elements match the given [predicate].\n \* \n \* Note that if the array contains no elements, the function returns `true`\n \* because there are no elements in it that \_do not\_ match the predicate.\n \* See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous\_truth) article.\n \* \n \* @sample

```
samples.collections.Collections.Aggregates.all\n *
\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the predicate.\n * See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample samples.collections.Collections.Aggregates.all\n *
\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the predicate.\n * See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample
```

```
samples.collections.Collections.Aggregates.all\n *
\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the predicate.\n * See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample samples.collections.Collections.Aggregates.all\n *
\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the predicate.\n * See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample
```

```
samples.collections.Collections.Aggregates.all\n *
\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the predicate.\n * See a more detailed explanation
```

of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous\_truth) article.

```

@sample
samples.collections.Collections.Aggregates.all\n */\npublic inline fun FloatArray.all(predicate: (Float) -> Boolean): Boolean {\n for (element
in this) if (!predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if all elements match the
given [predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there
are no elements in it that _do not_ match the predicate.\n * See a more detailed explanation of this logic concept in
["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample
samples.collections.Collections.Aggregates.all\n */\npublic inline fun DoubleArray.all(predicate: (Double) ->
Boolean): Boolean {\n for (element in this) if (!predicate(element)) return false\n return true\n}\n\n/**\n *
Returns `true` if all elements match the given [predicate].\n * \n * Note that if the array contains no elements, the
function returns `true`\n * because there are no elements in it that _do not_ match the predicate.\n * See a more
detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth)
article.\n * \n * @sample
samples.collections.Collections.Aggregates.all\n */\npublic inline fun BooleanArray.all(predicate: (Boolean) -> Boolean): Boolean {\n for (element in this) if (!predicate(element))
return false\n return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that
if the array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_
match the predicate.\n * See a more detailed explanation of this logic concept in ["Vacuous
truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample
samples.collections.Collections.Aggregates.all\n */\npublic inline fun CharArray.all(predicate: (Char) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if
array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun
<T>
Array<out T>.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one
element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun ByteArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun ShortArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun IntArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun LongArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun FloatArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun DoubleArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun BooleanArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun CharArray.any(): Boolean {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic inline fun <T> Array<out
T>.any(predicate: (T) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return true\n return
false\n}\n\n/**\n * Returns `true` if at least one element matches
the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic inline fun ByteArray.any(predicate: (Byte) -> Boolean): Boolean {\n for (element in this) if (predicate(element))
return true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample
samples.collections.Collections.Aggregates.any\n */\npublic inline fun ShortArray.any(predicate: (Short) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *

```



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@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^\npublic inline fun
IntArray.any(predicate: (Int) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return true\n
return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^\npublic inline fun
LongArray.any(predicate: (Long) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^\npublic inline fun
FloatArray.any(predicate: (Float) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^\npublic inline fun
DoubleArray.any(predicate: (Double) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*^\npublic inline fun BooleanArray.any(predicate: (Boolean) -> Boolean): Boolean {\n for (element in this) if
(predicate(element)) return true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the
given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n *^\npublic
inline fun CharArray.any(predicate: (Char) -> Boolean): Boolean {\n for (element in this) if (predicate(element))
return true\n return false\n}\n\n/**\n * Returns the number of elements in this array.\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.count(): Int {\n return size\n}\n\n/**\n *
Returns the number of elements in this array.\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.count(): Int {\n return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.count(): Int {\n return size\n}\n\n/**\n
* Returns the number of elements in this array.\n *^\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.count(): Int {\n return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.count(): Int {\n return size\n}\n\n/**\n * Returns the
number of elements in this array.\n *^\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.count(): Int {\n
return size\n}\n\n/**\n * Returns the number of elements in this array.\n *^\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.count(): Int {\n return size\n}\n\n/**\n * Returns the number of elements in this array.\n
*^\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.count(): Int {\n return size\n}\n\n/**\n * Returns
the number of elements in this array.\n *^\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.count(): Int {\n
return size\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*^\npublic inline fun <T> Array<out T>.count(predicate: (T) -> Boolean): Int {\n var count = 0\n for (element in
this) if (predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the number of elements matching the
given [predicate].\n *^\npublic inline fun ByteArray.count(predicate: (Byte) -> Boolean): Int {\n var count = 0\n
for (element in this) if (predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n *^\npublic inline fun ShortArray.count(predicate: (Short) -> Boolean): Int {\n var
count = 0\n for (element in this) if (predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n *^\npublic inline fun IntArray.count(predicate: (Int) ->
Boolean): Int {\n var count = 0\n for (element in this) if (predicate(element)) ++count\n return
count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n *^\npublic inline fun LongArray.count(predicate: (Long) -> Boolean): Int {\n var count = 0\n for
(element in this) if (predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n *^\npublic inline fun FloatArray.count(predicate: (Float) -> Boolean): Int {\n var
count = 0\n for (element in this) if (predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the
number of elements matching the given [predicate].\n *^\npublic inline fun DoubleArray.count(predicate: (Double) -
> Boolean): Int {\n var count = 0\n for (element in this) if (predicate(element)) ++count\n return
count\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n *^\npublic inline fun
BooleanArray.count(predicate: (Boolean) -> Boolean): Int {\n var count = 0\n for (element in this) if

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(predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the number of elements matching
the given [predicate].\n */\npublic inline fun CharArray.count(predicate: (Char) -> Boolean): Int {\n var count =
0\n for (element in this) if (predicate(element)) ++count\n return count\n}\n\n/**\n * Accumulates value starting
with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n *
\n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes
current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <T, R>
Array<out T>.fold(initial: R, operation: (acc: R, T) -> R): R {\n var accumulator = initial\n for (element in this)
accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting
with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n *
\n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the
next accumulator value.\n */\npublic inline fun <R> ByteArray.fold(initial: R, operation: (acc: R, Byte) -> R): R
{\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns
the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> ShortArray.fold(initial: R, operation: (acc: R, Short) -> R): R
{\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
value and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns
the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R>
IntArray.fold(initial: R, operation: (acc: R, Int) -> R): R {\n var accumulator = initial\n for (element in this)
accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting
with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element.\n *
\n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes
current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <R>
LongArray.fold(initial: R, operation: (acc: R, Long) -> R): R {\n var accumulator = initial\n
for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator
value and each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n */\npublic inline fun <R> FloatArray.fold(initial: R, operation: (acc: R, Float) -> R): R {\n var
accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to
right\n * to current accumulator value and each element.\n * \n * Returns the specified [initial] value if the array is
empty.\n * \n * @param [operation] function that takes current accumulator value and an element,
and calculates the next accumulator value.\n */\npublic inline fun <R> DoubleArray.fold(initial: R, operation: (acc:
R, Double) -> R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator,
element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the specified
[initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.\n */\npublic inline fun <R> BooleanArray.fold(initial: R,
operation: (acc: R, Boolean) -> R): R {\n var accumulator = initial\n for (element in this) accumulator =
operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
value and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline

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fun <R> CharArray.fold(initial: R, operation: (acc: R, Char) -> R): R {
 var accumulator = initial
 for (element in this) accumulator = operation(accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */
public inline fun <T, R> Array<out T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */
public inline fun <R> ByteArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */
public inline fun <R> ShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */
public inline fun <R> IntArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */
public inline fun <R> LongArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */
public inline fun <R> FloatArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */
public inline fun <R> DoubleArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

/** Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original array. Returns the specified [initial] value if the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.
 */

```

specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n

```

*^/npublic inline fun <R> BooleanArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n

```

*^/npublic inline fun <R> CharArray.foldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(index++, accumulator, element)
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from right to left\n \* to each element and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

*^/npublic inline fun <T, R> Array<out T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(get(index--), accumulator)
 }
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from right to left\n \* to each element and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

*^/npublic inline fun <R> ByteArray.foldRight(initial: R, operation: (Byte, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(get(index--), accumulator)
 }
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from right to left\n \* to each element and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

*^/npublic inline fun <R> ShortArray.foldRight(initial: R, operation: (Short, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(get(index--), accumulator)
 }
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from right to left\n \* to each element and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

*^/npublic inline fun <R> IntArray.foldRight(initial: R, operation: (Int, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(get(index--), accumulator)
 }
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from right to left\n \* to each element and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

*^/npublic inline fun <R> LongArray.foldRight(initial: R, operation: (Long, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(get(index--), accumulator)
 }
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from right to left\n \* to each element and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

*^/npublic inline fun <R> FloatArray.foldRight(initial: R, operation: (Float, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(get(index--), accumulator)
 }
 return accumulator
}

```

\n\n\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from right to left\n \* to each element and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```

<R> DoubleArray.foldRight(initial: R, operation: (Double, acc:
R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes an element
and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R>
BooleanArray.foldRight(initial: R, operation: (Boolean, acc: R) -> R): R {\n var index = lastIndex\n var
accumulator = initial\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right
to left\n * to each element and current accumulator value.\n * \n * Returns
the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R>
CharArray.foldRight(initial: R, operation: (Char, acc: R) -> R): R {\n var index = lastIndex\n var accumulator =
initial\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself\n * and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <T, R> Array<out T>.foldRightIndexed(initial: R, operation: (index: Int, T, acc:
R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator =
operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from right to left\n * to each element with its index in the
original array and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n *
\n * @param [operation] function that takes the index of an element, the element itself\n * and current accumulator
value, and calculates the next accumulator value.\n */\npublic inline fun <R> ByteArray.foldRightIndexed(initial: R,
operation: (index: Int, Byte, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while
(index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes the index of an element, the element itself\n * and current accumulator value, and
calculates the next accumulator value.\n */\npublic inline fun <R> ShortArray.foldRightIndexed(initial: R,
operation: (index: Int, Short, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while
(index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function
that takes the index of an element, the element itself\n * and current accumulator value, and calculates the next
accumulator value.\n */\npublic inline fun <R> IntArray.foldRightIndexed(initial: R, operation: (index: Int, Int, acc:
R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator =
operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from right to left\n * to each element with its index in the
original array and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n *
\n * @param [operation] function that takes the index of an element, the element itself\n * and current accumulator
value, and calculates the next accumulator value.\n */\npublic inline fun <R> LongArray.foldRightIndexed(initial:
R, operation: (index: Int, Long, acc: R) -> R): R
{\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator =
operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates

```

value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

public inline fun <R> FloatArray.foldRightIndexed(initial:
R, operation: (index: Int, Float, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

public inline fun <R> DoubleArray.foldRightIndexed(initial: R, operation: (index: Int,
Double, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

public inline fun <R> BooleanArray.foldRightIndexed(initial: R, operation: (index: Int,
Boolean, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original array and current accumulator value. Returns the specified [initial] value if the array is empty. @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

public inline fun <R> CharArray.foldRightIndexed(initial: R, operation: (index: Int, Char, acc: R) -> R): R {
 var index = lastIndex
 var accumulator = initial
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

```

Performs the given [action] on each element.

```

public inline fun <T> Array<out T>.forEach(action: (T) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun ByteArray.forEach(action: (Byte) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun ShortArray.forEach(action: (Short) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun IntArray.forEach(action: (Int) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun LongArray.forEach(action: (Long) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun FloatArray.forEach(action: (Float) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun DoubleArray.forEach(action: (Double) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun BooleanArray.forEach(action: (Boolean) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element.

```

public inline fun CharArray.forEach(action: (Char) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element, providing sequential index with the element. @param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

public inline fun <T> Array<out T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {
 var index = 0
 for (item in this) action(index++, item)
}

```

Performs the given [action] on each element, providing sequential index with the element. @param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

public inline fun

```

```

ByteArray.forEachIndexed(action: (index: Int, Byte) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Performs the given [action] on each element, providing sequential index with the element.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
public inline fun ShortArray.forEachIndexed(action: (index: Int, Short) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Performs the given [action] on each element, providing sequential index with the element.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
public inline fun IntArray.forEachIndexed(action: (index: Int, Int) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Performs the given [action] on each element, providing sequential index with the element.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
public inline fun LongArray.forEachIndexed(action: (index: Int, Long) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Performs the given [action] on each element, providing sequential index with the element.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
public inline fun FloatArray.forEachIndexed(action: (index: Int, Float) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Performs the given [action] on each element, providing sequential index with the element.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
public inline fun DoubleArray.forEachIndexed(action: (index: Int, Double) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Performs the given [action] on each element, providing sequential index with the element.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
public inline fun BooleanArray.forEachIndexed(action: (index: Int, Boolean) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Returns the largest element.
 * If any of elements is `NaN` returns `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
public inline fun CharArray.forEachIndexed(action: (index: Int, Char) -> Unit): Unit {
 var index = 0
 for (item in this)
 action(index++, item)
}

/** Returns the largest element.
 * If any of elements is `NaN` returns `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public fun Array<out Double>.max(): Double {
 if (isEmpty()) throw NoSuchElementException()
 var max = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 max = maxOf(max, e)
 }
 return max
}

/** Returns the largest element.
 * If any of elements is `NaN` returns `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public fun Array<out Float>.max(): Float {
 if (isEmpty()) throw NoSuchElementException()
 var max = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 max = maxOf(max, e)
 }
 return max
}

/** Returns the largest element.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public fun <T : Comparable<T>> Array<out T>.max(): T {
 if (isEmpty()) throw NoSuchElementException()
 var max = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (max < e)
 max = e
 }
 return max
}

/** Returns the largest element.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public fun ByteArray.max(): Byte {
 if (isEmpty()) throw NoSuchElementException()
 var max = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (max < e)
 max = e
 }
 return max
}

/** Returns the largest element.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")

```

```

DS`)npublic fun ShortArray.max(): Short {n if (isEmpty()) throw NoSuchElementException()n var max =
this[0]n for (i in 1..lastIndex) {n val e = this[i]n if (max < e) max = e\n }n return max\n}\n\n/**n *
Returns the largest element.n * \n * @throws NoSuchElementException if the array is empty.\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS`)npublic fun IntArray.max(): Int {n if (isEmpty()) throw NoSuchElementException()n var max = this[0]n
for (i in 1..lastIndex) {n val e = this[i]n if (max < e) max = e\n }n return max\n}\n\n/**n * Returns the largest element.n * \n * @throws
NoSuchElementException if the array is empty.\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS`)npublic fun LongArray.max(): Long {n if (isEmpty()) throw NoSuchElementException()n var max =
this[0]n for (i in 1..lastIndex) {n val e = this[i]n if (max < e) max = e\n }n return max\n}\n\n/**n * Returns the largest element.n * \n * If any of elements is `NaN` returns `NaN`.n * \n * @throws
NoSuchElementException if the array is empty.\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS`)npublic fun FloatArray.max(): Float {n if (isEmpty()) throw NoSuchElementException()n var max =
this[0]n for (i in 1..lastIndex) {n val e = this[i]n max = maxOf(max, e)\n }n return max\n}\n\n/**n * Returns the largest
element.n * \n * If any of elements is `NaN` returns `NaN`.n * \n * @throws NoSuchElementException if the
array is empty.\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS`)npublic fun DoubleArray.max(): Double {n if (isEmpty()) throw NoSuchElementException()n var max =
this[0]n for (i in 1..lastIndex) {n val e = this[i]n max = maxOf(max, e)\n }n return max\n}\n\n/**n * Returns the largest element.n * \n * @throws NoSuchElementException if the array is empty.\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS`)npublic fun CharArray.max(): Char {n if (isEmpty()) throw NoSuchElementException()n var max =
this[0]n for (i in 1..lastIndex) {n val e = this[i]n if (max < e) max = e\n }n return max\n}\n\n/**n * Returns the first element yielding the largest value of the given function.n * \n * @throws
NoSuchElementException
if the array is empty.n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS`)npublic inline fun <T, R : Comparable<R>> Array<out T>.maxBy(selector: (T) -> R): T {n if
(isEmpty()) throw NoSuchElementException()n var maxElem = this[0]n val lastIndex = this.lastIndexn if
(lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {n val e =
this[i]n val v = selector(e)\n if (maxValue < v) {n maxElem = e\n maxValue = v\n }n }n return maxElem\n}\n\n/**n * Returns the first element yielding the largest value of the given function.n * \n * @throws
NoSuchElementException if the array is empty.n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS`)npublic inline fun <R : Comparable<R>> ByteArray.maxBy(selector: (Byte) -> R): Byte {n if (isEmpty()) throw
NoSuchElementException()n var maxElem = this[0]n val lastIndex = this.lastIndexn if (lastIndex == 0)
return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {n val e = this[i]n val v
= selector(e)\n if (maxValue < v) {n maxElem = e\n maxValue = v\n }n }n return
maxElem\n}\n\n/**n * Returns the first element yielding the largest value of the given function.n * \n * @throws
NoSuchElementException if the array is empty.n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS`)npublic inline fun <R : Comparable<R>> ShortArray.maxBy(selector: (Short) -> R): Short {n if

```



```

(isEmpty()) throw NoSuchElementException()\n var maxElem = this[0]\n val lastIndex
= this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value
of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS")\npublic inline fun <R : Comparable<R>> IntArray.maxBy(selector: (Int) -> R): Int {\n if (isEmpty())
throw NoSuchElementException()\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex ==
0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val
v = selector(e)\n if (maxValue
< v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the
first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS")\npublic inline fun <R : Comparable<R>> LongArray.maxBy(selector: (Long) -> R): Long {\n if
(isEmpty()) throw NoSuchElementException()\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS")\npublic inline fun <R : Comparable<R>> FloatArray.maxBy(selector: (Float) -> R): Float {\n if
(isEmpty()) throw NoSuchElementException()\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS")\npublic inline fun <R : Comparable<R>> DoubleArray.maxBy(selector: (Double) -> R): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0)
return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v
= selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return
maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL
OADS")\npublic inline fun <R : Comparable<R>> BooleanArray.maxBy(selector: (Boolean) -> R): Boolean {\n if
(isEmpty()) throw NoSuchElementException()\n var
maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =
selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first
element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERL

```



```

{\n maxElem = e\n maxValue = v\n }\n }\n return
maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there
are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n
*/\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> BooleanArray.maxByOrNull(selector:
(Boolean) -> R): Boolean? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex =
this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n
maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value
of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun <R :
Comparable<R>> CharArray.maxByOrNull(selector:
(Char) -> R): Char? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n
if (lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (maxValue < v) {\n maxElem = e\n maxValue = v\n }\n
}\n return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOf(selector: (T) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue
= selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue,
v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector]
function\n * applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`,
the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOf(selector: (Byte) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied
to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun IntArray.maxOf(selector: (Int) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOf(selector: (Long) ->

```

```

Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}
/**
 * Returns the largest value among all values produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is
 * `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun FloatArray.maxOf(selector: (Float) ->
Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}
/**
 * Returns the largest value among all values produced by [selector] function
 * applied to each element
 * in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun DoubleArray.maxOf(selector: (Double) ->
Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}
/**
 * Returns the largest value among all values produced by [selector] function
 * applied to each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is
 * `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.internal.InlineOnly
public
inline fun BooleanArray.maxOf(selector: (Boolean) -> Double): Double {
 if (isEmpty()) throw
 NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v =
 selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return maxValue
}
/**
 * Returns the
 * largest value among all values produced by [selector] function
 * applied to each element in the array.
 * If
 * any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * @throws
 * NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun CharArray.maxOf(selector: (Char) ->
Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}
/**
 * Returns the largest value among all values produced by [selector] function
 * applied to
 * each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is
 * `NaN`.
 * @throws NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.maxOf(selector: (T) ->
Float): Float {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i
 in 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}
/**
 * Returns the largest value among all values produced by [selector] function
 * applied to
 * each element in the array.
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * @throws
 * NoSuchElementException if the array is empty.
 */
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolution
ByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun ByteArray.maxOf(selector: (Byte) -> Float):
Float {
 if (isEmpty()) throw NoSuchElementException()
 var maxValue = selector(this[0])
 for (i in
 1..lastIndex) {
 val v = selector(this[i])
 maxValue = maxOf(maxValue, v)
 }
 return
 maxValue
}
/**
 * Returns the largest value among all values produced by [selector] function
 * applied to
 */

```

each element in the array.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun ShortArray.maxOf(selector: (Short) -> Float): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOf(selector: (Int) -> Float):
Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in
1..lastIndex)
{\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n *
Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOf(selector: (Long) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i
in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException
if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOf(selector: (Float) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i
in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result
is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.maxOf(selector: (Double) -> Float): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOf(selector: (Boolean) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i
in 1..lastIndex) {\n val v
= selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n

```

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOf(selector: (Char) -> Float):
Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function
 * applied to each element in the array.\n * \n * @throws NoSuchElementException
if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>> Array<out
T>.maxOf(selector: (T) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function
 * applied to each element in the array.\n * \n * @throws NoSuchElementException if the
array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ByteArray.maxOf(selector: (Byte) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue <
v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all
values produced by [selector] function
 * applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
ShortArray.maxOf(selector: (Short) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values
produced by [selector] function
 * applied to each element
in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
IntArray.maxOf(selector: (Int) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function
 * applied to each element in the array.\n * \n * @throws NoSuchElementException if the
array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
LongArray.maxOf(selector: (Long) -> R):
R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function
 * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
FloatArray.maxOf(selector: (Float) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values
```

produced

by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
DoubleArray.maxOf(selector: (Double) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var\n maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values
```

produced by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws

NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R
```

```
: Comparable<R>> BooleanArray.maxOf(selector: (Boolean) -> R): R {\n if (isEmpty()) throw
```

```
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =\n selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n *
```

Returns the largest value among all values produced by [selector] function\n \* applied to each element in the

array.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```
CharArray.maxOf(selector: (Char) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var\n maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n *
```

\* Returns the largest value among all values produced by [selector] function\n \* applied to each element in the

array or `null` if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the

returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOfOrNull(selector:
```

```
(T) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
```

maxValue\n}\n\n/\*\*\n \* Returns the largest value among all values produced by [selector] function\n \* applied to

each element in the array or `null` if there are no elements.\n \* \n \* If any of values produced by [selector] function

is `NaN`, the returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun ByteArray.maxOfOrNull(selector: (Byte) -> Double): Double? {\n if (isEmpty()) return null\n var\n maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
```

maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/\*\*\n \* Returns the largest value among all values produced

by [selector] function\n \* applied to each element in the array or `null` if there are no elements.\n \* \n \* If any of

```
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOfOrNull(selector: (Short) -
```

```
> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i\n in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
```

maxValue\n}\n\n/\*\*\n \* Returns the largest value among all values produced by [selector] function\n \* applied to

each element in the array or `null` if there are no elements.\n \* \n \* If any of values produced by [selector] function

is `NaN`, the returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOfOrNull(selector: (Int) ->
```

Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue}\n\n/n/n/\*\*\n \* Returns the largest value among all values produced by [selector] function\n \* applied to each element in the array or `null` if there are no elements.\n \* \n \*

If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOfOrNull(selector: (Long) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue}\n\n/n/n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOfOrNull(selector: (Float) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue}\n\n/n/n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOfOrNull(selector: (Double) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue}\n\n/n/n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOfOrNull(selector: (Boolean) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue}\n\n/n/n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOfOrNull(selector: (Char) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue}\n\n/n/n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.maxOfOrNull(selector: (T) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue}\n\n/n/n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
```



```
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.maxOrNull(selector: (Byte) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.maxOrNull(selector: (Short) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.maxOrNull(selector: (Int) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.maxOrNull(selector: (Long) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.maxOrNull(selector: (Float) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.maxOrNull(selector: (Double) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n */
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.maxOrNull(selector: (Boolean) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * If any of values produced by [selector] function is `NaN`, the
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returned result is `NaN`.\n

```
\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.maxOrNull(selector: (Char) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n Returns the largest value among all values produced by [selector] function\n* applied to each element in the array or `null` if there are no elements.\n
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```
\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\n inline fun <T, R : Comparable<R>> Array<out T>.maxOrNull(selector: (T) -> R): R? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n Returns the largest value among all values produced by [selector] function\n* applied to each element in the array or `null` if there are no elements.\n
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```
\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n ByteArray.maxOrNull(selector: (Byte) -> R): R? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n Returns the largest value among all values produced by [selector] function\n* applied to each element in the array or `null` if there are no elements.\n
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```
\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n ShortArray.maxOrNull(selector: (Short) -> R): R? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n Returns the largest value among all values produced by [selector] function\n* applied to each element in the array or `null` if there are no elements.\n
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```
\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n IntArray.maxOrNull(selector: (Int) -> R): R? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n Returns the largest value among all values produced by [selector] function\n* applied to each element in the array or `null` if there are no elements.\n
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```
\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n LongArray.maxOrNull(selector: (Long) -> R): R? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n Returns the largest value among all values produced by [selector]\nfunction\n* applied to each element in the array or `null` if there are no elements.\n
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```
\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n FloatArray.maxOrNull(selector: (Float) -> R): R? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n Returns the largest value among all values produced by [selector] function\n* applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\n
```

```

DoubleArray.maxOrNull(selector: (Double) -> R): R? {\n if
(isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array
or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
BooleanArray.maxOrNull(selector: (Boolean) -> R): R? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array
or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
CharArray.maxOrNull(selector: (Char) -> R): R? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n
maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.maxOfWith(comparator: Comparator<in R>, selector: (T)
-> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n maxValue
= v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.maxOfWith(comparator:
Comparator<in R>, selector: (Byte) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue
= v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.maxOfWith(comparator:
Comparator<in R>, selector: (Short) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.maxOfWith(comparator:
Comparator<in R>, selector: (Int) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue
= selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n *

```

Returns the largest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the array. @throws NoSuchElementException if the array is empty.

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*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <R> LongArray.maxOfWith(comparator:
Comparator<in R>, selector: (Long) -> R): R {n if (isEmpty()) throw NoSuchElementException()n var
maxValue = selector(this[0])n for (i in 1..lastIndex) {n val v = selector(this[i])n if
(comparator.compare(maxValue, v) < 0) {n maxValue = v\n }n }n return maxValue\n}n/n/**n
Returns the largest value according to the provided [comparator] among all values produced by [selector]
function applied to each element in the array. @throws NoSuchElementException if the array is empty.
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <R> FloatArray.maxOfWith(comparator:
Comparator<in R>, selector: (Float) -> R): R {n if (isEmpty()) throw NoSuchElementException()n var
maxValue = selector(this[0])n for (i in 1..lastIndex) {n val v = selector(this[i])n if
(comparator.compare(maxValue, v) < 0) {n maxValue = v\n }n }n return maxValue\n}n/n/**n
Returns the largest value according to the provided [comparator] among all values produced by [selector]
function applied to each element in the array. @throws NoSuchElementException if the array is empty.
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <R> DoubleArray.maxOfWith(comparator:
Comparator<in R>, selector: (Double) -> R): R {n if (isEmpty()) throw NoSuchElementException()n var
maxValue = selector(this[0])n for (i in 1..lastIndex) {n val v = selector(this[i])n if
(comparator.compare(maxValue, v) < 0) {n maxValue = v\n }n }n return maxValue\n}n/n/**n
Returns the largest value according to the provided [comparator] among all values produced by [selector]
function
applied to each element in the array. @throws NoSuchElementException if the array is empty.
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <R> BooleanArray.maxOfWith(comparator:
Comparator<in R>, selector: (Boolean) -> R): R {n if (isEmpty()) throw NoSuchElementException()n var
maxValue = selector(this[0])n for (i in 1..lastIndex) {n val v = selector(this[i])n if
(comparator.compare(maxValue, v) < 0) {n maxValue = v\n }n }n return maxValue\n}n/n/**n
Returns the largest value according to the provided [comparator] among all values produced by [selector]
function applied to each element in the array. @throws NoSuchElementException if the array is empty.
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic
inline fun <R> CharArray.maxOfWith(comparator: Comparator<in R>, selector: (Char) -> R): R {n if
(isEmpty()) throw NoSuchElementException()n var maxValue = selector(this[0])n for (i in 1..lastIndex) {n
val v = selector(this[i])n if (comparator.compare(maxValue, v) < 0) {n maxValue = v\n }n }n
return maxValue\n}n/n/**n
Returns the largest value according to the provided [comparator] among all
values produced by [selector] function applied to each element in the array or `null` if there are no elements.
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <T, R> Array<out
T>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {n if (isEmpty()) return null\n
var maxValue = selector(this[0])n for (i in 1..lastIndex) {n val v =
selector(this[i])n if (comparator.compare(maxValue, v) < 0) {n maxValue = v\n }n }n return
maxValue\n}n/n/**n
Returns the largest value according to the provided [comparator] among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <R>
ByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? {n if (isEmpty()) return

```

```

null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to
each element in the array or `null` if there are no elements.\n
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n *
Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
IntArray.maxOfWithOrNull(comparator:
Comparator<in R>, selector: (Int) -> R): R? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n
for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n
maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array or `null` if
there are no elements.\n
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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
LongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
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elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
FloatArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Float) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {\n if
(isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return
maxValue\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values
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return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
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Returns the largest value according to the provided [comparator] \* among all values produced by [selector] function applied to each element in the array or `null` if there are no elements.

```

*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolutionByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <R>
CharArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\/n if (isEmpty()) return
null\/n var max = selector(this[0])\/n for (i in 1..lastIndex) {\/n val v = selector(this[i])\/n if
(comparator.compare(max, v) < 0) {\/n max = v\/n }\/n }\/n return max}\/n}\/n * Returns the largest element or `null` if there
are no elements.\/n *\/n * If any of elements is `NaN` returns `NaN`.\/n *\/n@SinceKotlin("1.4")\/npublic fun
Array<out Double>.maxOrNull(): Double? {\/n if (isEmpty()) return null\/n var max = this[0]\/n for (i in
1..lastIndex) {\/n val e = this[i]\/n max = maxOf(max, e)\/n }\/n return max}\/n}\/n * Returns the
largest element or `null` if there are no elements.\/n *\/n * If any of elements is `NaN` returns `NaN`.\/n
*\/n@SinceKotlin("1.4")\/npublic fun Array<out Float>.maxOrNull(): Float? {\/n if (isEmpty()) return null\/n var
max = this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n max = maxOf(max, e)\/n }\/n return
max}\/n}\/n * Returns the largest element or `null` if there are no elements.\/n *\/n@SinceKotlin("1.4")\/npublic
fun <T : Comparable<T>> Array<out T>.maxOrNull(): T? {\/n if (isEmpty()) return null\/n var max = this[0]\/n
for (i in 1..lastIndex) {\/n val e = this[i]\/n if (max < e) max = e\/n }\/n return max}\/n}\/n * Returns the largest element or `null` if there are no elements.\/n
*\/n@SinceKotlin("1.4")\/npublic fun ByteArray.maxOrNull(): Byte? {\/n if (isEmpty()) return null\/n var max =
this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n if (max < e) max = e\/n }\/n return max}\/n}\/n * Returns the largest element or `null` if there are no elements.\/n
*\/n@SinceKotlin("1.4")\/npublic fun ShortArray.maxOrNull(): Short? {\/n if (isEmpty()) return null\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n
 val e = this[i]\/n if (max < e) max = e\/n }\/n return max}\/n}\/n * Returns the largest element or `null` if
there are no elements.\/n *\/n@SinceKotlin("1.4")\/npublic fun IntArray.maxOrNull(): Int? {\/n if (isEmpty())
return null\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n if (max < e) max = e\/n }\/n
return max}\/n}\/n * Returns the largest element or
`null` if there are no elements.\/n *\/n@SinceKotlin("1.4")\/npublic fun LongArray.maxOrNull(): Long? {\/n if
(isEmpty()) return null\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n if (max < e) max
= e\/n }\/n return max}\/n}\/n * Returns the largest element or `null` if there are no elements.\/n *\/n * If any
of elements is `NaN` returns `NaN`.\/n *\/n@SinceKotlin("1.4")\/npublic fun FloatArray.maxOrNull(): Float? {\/n
if (isEmpty()) return null\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n max =
maxOf(max, e)\/n }\/n return max}\/n}\/n * Returns the largest element or `null` if there are no elements.\/n
*\/n * If any of elements is `NaN` returns `NaN`.\/n *\/n@SinceKotlin("1.4")\/npublic fun DoubleArray.maxOrNull():
Double? {\/n if (isEmpty()) return null\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n
max = maxOf(max, e)\/n }\/n return
max}\/n}\/n * Returns the largest element or `null` if there are no elements.\/n
*\/n@SinceKotlin("1.4")\/npublic fun CharArray.maxOrNull(): Char? {\/n if (isEmpty()) return null\/n var max =
this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n if (max < e) max = e\/n }\/n return max}\/n}\/n * Returns the first element having the largest value according to the provided [comparator].\/n *\/n * @throws
NoSuchElementException if the array is empty.\/n
*\/n@SinceKotlin("1.7")\/n@kotlin.jvm.JvmName("maxWithOrThrow")\/n@Suppress("CONFLICTING_OVERLOADS")\/npublic fun <T> Array<out T>.maxWith(comparator: Comparator<in T>): T {\/n if (isEmpty()) throw
NoSuchElementException()\/n var max = this[0]\/n for (i in 1..lastIndex) {\/n val e = this[i]\/n if
(comparator.compare(max, e) < 0) max = e\/n }\/n return max}\/n}\/n * Returns the first element having the
largest value according to the provided [comparator].\/n *\/n * @throws NoSuchElementException
if the array is empty.\/n
*\/n@SinceKotlin("1.7")\/n@kotlin.jvm.JvmName("maxWithOrThrow")\/n@Suppress("CONFLICTING_OVERLOADS")\/npublic fun ByteArray.maxWith(comparator: Comparator<in Byte>): Byte {\/n if (isEmpty()) throw

```

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NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n\n * \n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("maxWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun ShortArray.maxWith(comparator: Comparator<in Short>): Short {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n\n * \n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("maxWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun IntArray.maxWith(comparator: Comparator<in Int>): Int {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n\n * \n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("maxWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun LongArray.maxWith(comparator: Comparator<in Long>): Long {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n\n * \n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("maxWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun FloatArray.maxWith(comparator: Comparator<in Float>): Float {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n\n * \n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("maxWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun DoubleArray.maxWith(comparator: Comparator<in Double>): Double {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n\n * \n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("maxWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun BooleanArray.maxWith(comparator: Comparator<in Boolean>): Boolean {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n\n * \n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("maxWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun CharArray.maxWith(comparator: Comparator<in Char>): Char {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n\n * \n @SinceKotlin("1.4")\n public fun <T> Array<out T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if

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(comparator.compare(max, e) < 0) max = e\n } \n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun ByteArray.maxWithOrNull(comparator: Comparator<in Byte>): Byte? {\n
if (isEmpty())\n
return null\n
var max = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(max,
e) < 0) max = e\n
}\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun
ShortArray.maxWithOrNull(comparator: Comparator<in Short>): Short? {\n
if (isEmpty()) return null\n
var max
= this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n
}\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun IntArray.maxWithOrNull(comparator:
Comparator<in Int>): Int? {\n
if (isEmpty()) return null\n
var max = this[0]\n
for (i in 1..lastIndex) {\n
val
e = this[i]\n
if (comparator.compare(max, e)
< 0) max = e\n
}\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the
provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun
LongArray.maxWithOrNull(comparator: Comparator<in Long>): Long? {\n
if (isEmpty()) return null\n
var max
= this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n
}\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun FloatArray.maxWithOrNull(comparator:
Comparator<in Float>): Float? {\n
if (isEmpty()) return null\n
var max = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n
}\n
return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator]
or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun
DoubleArray.maxWithOrNull(comparator: Comparator<in Double>): Double? {\n
if (isEmpty()) return null\n
var max
= this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(max, e) < 0) max =
e\n
}\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun
BooleanArray.maxWithOrNull(comparator: Comparator<in Boolean>): Boolean? {\n
if (isEmpty()) return null\n
var max
= this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(max, e) < 0) max =
e\n
}\n
return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun
CharArray.maxWithOrNull(comparator:
Comparator<in Char>): Char? {\n
if (isEmpty()) return null\n
var max = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n
}\n
return max\n}\n\n/**\n * Returns the
smallest element.\n
*\n * If any of elements is `NaN` returns `NaN`.\n
*\n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Double>.min(): Double {\n
if (isEmpty()) throw NoSuchElementException()\n
var
min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
min = minOf(min, e)\n
}\n
return
min\n}\n\n/**\n * Returns the smallest element.\n
*\n * If any of elements is `NaN` returns `NaN`.\n
*\n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Array<out Float>.min():
Float {\n
if (isEmpty()) throw NoSuchElementException()\n
var min = this[0]\n
for (i in 1..lastIndex) {\n
val e = this[i]\n
min = minOf(min, e)\n
}\n
return min\n}\n\n/**\n * Returns the smallest element.\n
*\n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Array<out T>.min(): T {\n
if (isEmpty()) throw

```





throw

```
NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0)\n return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v =\n selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return\n minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws\n NoSuchElementException if the array is empty.\n * \n * @sample
```

samples.collections.Collections.Aggregates.minBy\n

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO\nADS")\npublic inline fun <R : Comparable<R>> ShortArray.minBy(selector: (Short) -> R): Short {\n if\n (isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if\n (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex)\n {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue\n = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given\n function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
```

samples.collections.Collections.Aggregates.minBy\n

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO\nADS")\npublic inline fun <R : Comparable<R>> IntArray.minBy(selector: (Int) -> R): Int {\n if (isEmpty())\n throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex ==\n 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val\n v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return\n minElem\n}\n\n/**\n * Returns
```

the first element yielding the smallest value of the given function.\n \* \n \* @throws NoSuchElementException if\n the array is empty.\n \* \n \* @sample samples.collections.Collections.Aggregates.minBy\n

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO\nADS")\npublic inline fun <R : Comparable<R>> LongArray.minBy(selector: (Long) -> R): Long {\n if\n (isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if\n (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =\n this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
```

samples.collections.Collections.Aggregates.minBy\n

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO\nADS")\npublic inline fun <R : Comparable<R>> FloatArray.minBy(selector: (Float) -> R): Float {\n if\n (isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if\n (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =\n this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
```

samples.collections.Collections.Aggregates.minBy\n

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO\nADS")\npublic inline fun <R : Comparable<R>> DoubleArray.minBy(selector: (Double) ->\n R): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex =\n this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in\n 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value\n of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
```

samples.collections.Collections.Aggregates.minBy\n

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
```

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ADS\)\npublic inline fun <R : Comparable<R>> BooleanArray.minBy(selector: (Boolean) -> R): Boolean {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue
= selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue >
v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n
*/\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS\)\npublic inline fun <R : Comparable<R>> CharArray.minBy(selector: (Char) -> R): Char {\n if
(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function
or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <T, R : Comparable<R>> Array<out T>.minByOrNull(selector: (T) ->
R): T? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex
== 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n
val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return
minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there
are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ByteArray.minByOrNull(selector:
(Byte) -> R): Byte? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n
if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> ShortArray.minByOrNull(selector: (Short) ->
R): Short? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> IntArray.minByOrNull(selector: (Int) -> R): Int? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> LongArray.minByOrNull(selector: (Long) ->
R): Long? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e =
this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or
`null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*/\n\n@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> FloatArray.minByOrNull(selector: (Float) ->
R): Float? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n

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 for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem
= e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the
smallest value of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n * @SinceKotlin("1.4")\n\npublic inline fun <R :
Comparable<R>> DoubleArray.minByOrNull(selector: (Double) -> R): Double? {\n if (isEmpty()) return null\n
var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue =
selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v)
{\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first
element yielding the smallest value of the given function or `null`
if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
* \n * @SinceKotlin("1.4")\n\npublic inline fun <R : Comparable<R>> BooleanArray.minByOrNull(selector:
(Boolean) -> R): Boolean? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex =
this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n
minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value
of the given function or `null` if there are no elements.\n * \n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n * \n * @SinceKotlin("1.4")\n\npublic inline fun <R :
Comparable<R>> CharArray.minByOrNull(selector: (Char) -> R): Char? {\n if (isEmpty()) return null\n var
minElem = this[0]\n val lastIndex
= this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in
1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n
minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
* \n * @SinceKotlin("1.4")\n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * @OverloadResolution
ByLambdaReturnType\n * @kotlin.internal.InlineOnly\n\npublic inline fun <T> Array<out T>.minOf(selector: (T) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n minValue
= minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values
produced by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by
[selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n * @SinceKotlin("1.4")\n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * @OverloadResolution
ByLambdaReturnType\n * @kotlin.internal.InlineOnly\n\npublic inline fun ByteArray.minOf(selector: (Byte) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n minValue
= minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @SinceKotlin("1.4")\n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * @OverloadResolution
ByLambdaReturnType\n * @kotlin.internal.InlineOnly\n\npublic inline fun ShortArray.minOf(selector: (Short) ->
Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n minValue
= minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @SinceKotlin("1.4")\n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n * @OverloadResolution
ByLambdaReturnType\n * @kotlin.internal.InlineOnly\n\npublic

```

```

inline fun IntArray.minOf(selector: (Int) -> Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 minValue = minOf(minValue, v)
 }
 return minValue
}

```

`minOf` Returns the smallest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty.

```

*\/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOf(selector: (Long) ->
Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 minValue = minOf(minValue,
 v)
 }
 return minValue
}

```

`minOf` Returns the smallest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty.

```

*\/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOf(selector: (Float) ->
Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 minValue = minOf(minValue, v)
 }
 return
minValue
}

```

`minOf` Returns the smallest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty.

```

*\/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOf(selector: (Double) ->
Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 minValue = minOf(minValue, v)
 }
 return
minValue
}

```

`minOf` Returns the smallest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty.

```

*\/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline
fun BooleanArray.minOf(selector: (Boolean) -> Double): Double {
 if (isEmpty()) throw
NoSuchElementException()
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v =
selector(this[i])
 minValue = minOf(minValue, v)
 }
 return minValue
}

```

`minOf` Returns the smallest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty.

```

*\/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOf(selector: (Char) ->
Double): Double {
 if (isEmpty()) throw NoSuchElementException()
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 minValue = minOf(minValue,
 v)
 }
 return minValue
}

```

`minOf` Returns the smallest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`. @throws NoSuchElementException if the array is empty.

```

*\/@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOf(selector: (T) ->
Float): Float {
 if (isEmpty()) throw NoSuchElementException()
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 minValue = minOf(minValue, v)
 }
 return
minValue
}

```

`minOf` Returns the smallest value among all values produced by [selector] function applied to each element in the array. If any of values produced by [selector] function is `NaN`, the returned result

```

is `NaN`.n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOf(selector: (Byte) -> Float):
Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOf(selector:
(Short) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n
}\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOf(selector: (Int) -> Float):
Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOf(selector: (Long) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOf(selector: (Float) -> Float):
Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOf(selector:
(Double) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n
}\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned
result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOf(selector: (Boolean) ->
Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in
1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n

```

minValue}\n\n/\*\*\n

\* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOf(selector: (Char) -> Float):

Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return

minValue}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic

inline fun <T, R : Comparable<R>> Array<out T>.minOf(selector: (T) -> R): R {\n if (isEmpty()) throw  
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =  
selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue}\n\n/\*\*\n

Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>

ByteArray.minOf(selector: (Byte) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var minValue  
= selector(this[0])\n for (i in 1..lastIndex) {\n val  
v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue}\n\n/\*\*\n

\* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>

ShortArray.minOf(selector: (Short) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var  
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n  
minValue = v\n }\n }\n return minValue}\n\n/\*\*\n

Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws  
NoSuchElementException if the array is empty.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>

IntArray.minOf(selector: (Int) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var minValue =  
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n  
minValue = v\n }\n }\n return minValue}\n\n/\*\*\n

Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws NoSuchElementException if the  
array is empty.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>

LongArray.minOf(selector: (Long) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var  
minValue = selector(this[0])\n

for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n  
}\n return minValue}\n\n/\*\*\n

Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array.\n \* \n \* @throws NoSuchElementException if the array is empty.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>

FloatArray.minOf(selector: (Float) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var

```

minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values\n produced by [selector] function\n * applied to each element in the array.\n * \n *\n * @throws NoSuchElementException if the array is empty.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nDoubleArray.minOf(selector: (Double) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var\nminValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values\n produced by [selector] function\n * applied to each element in the array.\n * \n *\n * @throws\nNoSuchElementException if the array is empty.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nBooleanArray.minOf(selector: (Boolean) -> R): R {\n if (isEmpty())\nthrow NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =\nselector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the\n array.\n * \n *\n * @throws\nNoSuchElementException if the array is empty.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nCharArray.minOf(selector: (Char) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var minValue\n= selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n by [selector]\n function\n * applied to each element in the array or `null` if there are no elements.\n * \n *\n * If any of values\n produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOfOrNull(selector:\n(T) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in\n1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array or `null` if there are no elements.\n * \n *\n * If any of values\n produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun ByteArray.minOfOrNull(selector: (Byte) -> Double): Double? {\n if (isEmpty()) return null\n var\nminValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =\nminOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n *\n * If any of\n values produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.minOfOrNull(selector: (Short) -\n> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue\n= minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values\n produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n *\n * If\n any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n\n*/\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```



ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOrNull(selector: (Int) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOrNull(selector: (Long) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOrNull(selector: (Float) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOrNull(selector: (Double) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOrNull(selector: (Boolean) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOrNull(selector: (Char) -> Double): Double? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

\*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.minOrNull(selector: (T) -> Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/\*\*\n \* Returns the smallest value among all values produced by [selector] function\n \* applied to each element in the array or `null`\n if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the

returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.minOrNull(selector: (Byte) ->\nFloat): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the\n smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if\n there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\n inline fun ShortArray.minOrNull(selector: (Short) -> Float): Float? {\n if (isEmpty()) return null\n var\n minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =\n minOf(minValue, v)\n }\n return minValue\n }\n\n /**\n * Returns the smallest value among all values produced\n by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of\n values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.minOrNull(selector: (Int) ->\nFloat): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex)\n {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array\n or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned\n result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.minOrNull(selector: (Long) -\n> Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the\n smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if\n there are no elements.\n * \n * If any\n of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
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```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.minOrNull(selector: (Float) ->\nFloat): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the\n smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if\n there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is\n `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.minOrNull(selector:\n(Double) -> Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\n minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function\n is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.minOrNull(selector:\n(Boolean) -> Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\n minValue\n}\n\n/**\n * Returns the smallest value among all values\n
```

produced by [selector] function\n \* applied to each element in the array or `null` if there are no elements.\n \* \n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.minOfOrNull(selector: (Char) ->\nFloat): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n * Returns the\nsmallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if\nthere are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>\nArray<out T>.minOfOrNull(selector: (T) -> R): R? {\n if (isEmpty()) return null\n var minValue =\nselector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest value among all values produced\nby [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
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```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nByteArray.minOfOrNull(selector: (Byte) -> R): R? {\n if (isEmpty()) return null\n var minValue =\nselector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest value among all values produced\nby [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nShortArray.minOfOrNull(selector: (Short) -> R): R? {\n if (isEmpty()) return null\n var minValue =\nselector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest value among all values produced\nby [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nIntArray.minOfOrNull(selector: (Int) -> R): R? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =\nselector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array\nor `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nLongArray.minOfOrNull(selector: (Long) -> R): R? {\n if (isEmpty()) return null\n var minValue =\nselector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest value among all values produced\nby [selector] function\n * applied to each element in the\narray or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nFloatArray.minOfOrNull(selector: (Float) -> R): R? {\n if (isEmpty()) return null\n var minValue =\nselector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest value among all values produced\nby [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
```

```

DoubleArray.minOrNull(selector: (Double) -> R): R? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n
 for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>
BooleanArray.minOrNull(selector: (Boolean) -> R): R? {\n if (isEmpty()) return null\n var minValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> CharArray.minOrNull(selector: (Char) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n
 var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ByteArray.minOfWith(comparator:
Comparator<in R>, selector: (Byte) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> ShortArray.minOfWith(comparator:
Comparator<in R>, selector: (Short) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value according to the provided [comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> IntArray.minOfWith(comparator:
Comparator<in R>, selector: (Int) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var minValue
= selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (comparator.compare(minValue,
v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.minOfWith(comparator:
Comparator<in R>, selector:
(Long) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each element in the array.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.minOfWith(comparator:
Comparator<in R>, selector: (Float) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value according to the
provided [comparator]\n * among all values produced by [selector] function applied to each element in the array.\n *
*\n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.minOfWith(comparator:
Comparator<in R>, selector: (Double) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n
* \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.minOfWith(comparator:
Comparator<in R>, selector: (Boolean) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all values produced by [selector]
function applied to each element in the array.\n
* \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> CharArray.minOfWith(comparator: Comparator<in R>, selector: (Char) -> R): R {\n if
(isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n
val v = selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value according to the provided
[comparator]\n * among all
values produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> Array<out
T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n if (isEmpty()) return null\n
var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue,
v) > 0) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ByteArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Byte) -> R): R? {\n if (isEmpty()) return

```

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null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/*
Returns the smallest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null`
if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Short) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/*
Returns the smallest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
IntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Int)
-> R): R? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v
= selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return
minValue\n}\n\n/*
Returns the smallest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
LongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Long) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/*
Returns the smallest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
FloatArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Float) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/*
Returns the smallest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <R> DoubleArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Double) -> R): R? {\n
 if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return
minValue\n}\n\n/*
Returns the smallest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
BooleanArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Boolean) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n
 for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n
minValue = v\n }\n }\n return minValue\n}\n\n/*
Returns the smallest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if
there are no elements.\n
*/

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R>
CharArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
Returns the smallest element or `null` if there are no elements.\n * \n * If any
of elements is `NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun Array<out Double>.minOrNull():
Double? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n
min = minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no
elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun Array<out
Float>.minOrNull(): Float? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n min = minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null` if
there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Array<out T>.minOrNull():
T? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min
> e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
*/\n@SinceKotlin("1.4")\npublic fun
ByteArray.minOrNull(): Byte? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null` if
there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun ShortArray.minOrNull(): Short? {\n if (isEmpty())
return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n
return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun IntArray.minOrNull(): Int? {\n if (isEmpty()) return null\n var min =
this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n *
Returns the smallest element or `null` if there are no
elements.\n */\n@SinceKotlin("1.4")\npublic fun LongArray.minOrNull(): Long? {\n if (isEmpty()) return
null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return
min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * If any of elements is
`NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun FloatArray.minOrNull(): Float? {\n if (isEmpty())
return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n min = minOf(min, e)\n }\n
return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * If any of elements is
`NaN` returns `NaN`.\n */\n@SinceKotlin("1.4")\npublic fun DoubleArray.minOrNull(): Double? {\n if
(isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n min = minOf(min,
e)\n }\n return min\n}\n\n/**\n * Returns
the smallest element or `null` if there are no elements.\n */\n@SinceKotlin("1.4")\npublic fun
CharArray.minOrNull(): Char? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun <T> Array<out T>.minWith(comparator: Comparator<in T>): T {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the
array is empty.\n */\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun ByteArray.minWith(comparator: Comparator<in Byte>): Byte {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the

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smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun ShortArray.minWith(comparator: Comparator<in Short>): Short {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having
the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array
is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun IntArray.minWith(comparator: Comparator<in Int>): Int {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun LongArray.minWith(comparator: Comparator<in Long>): Long {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min,
e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to
the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun FloatArray.minWith(comparator: Comparator<in Float>): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun DoubleArray.minWith(comparator: Comparator<in Double>): Double {\n if (isEmpty())
throw NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min =
e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided
[comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic fun BooleanArray.minWith(comparator: Comparator<in Boolean>): Boolean {\n if
(isEmpty()) throw NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e =
this[i]\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first
element having the smallest value according to the provided [comparator].\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic
fun CharArray.minWith(comparator: Comparator<in Char>): Char {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\npublic fun <T> Array<out T>.minWithOrNull(comparator: Comparator<in T>): T? {\n
if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
smallest value according to the provided [comparator] or `null` if there are no elements.\n

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* Since Kotlin("1.4")
public fun ByteArray.minWithOrNull(comparator: Comparator<in Byte>): Byte? {
 if (isEmpty()) return
 null
 var min = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0)
 min = e
 }
 return min
}
* Returns the first element having the smallest value according to the
provided [comparator] or `null` if there are no elements.
* Since Kotlin("1.4")
public fun
ShortArray.minWithOrNull(comparator: Comparator<in Short>): Short? {
 if (isEmpty()) return null
 var min
 = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0) min = e
 }
 return min
}
* Returns the first element having the smallest value according to the provided [comparator]
or `null` if there are no elements.
* Since Kotlin("1.4")
public fun IntArray.minWithOrNull(comparator:
Comparator<in Int>): Int? {
 if (isEmpty()) return null
 var min = this[0]
 for (i in 1..lastIndex) {
 val
e = this[i]
 if (comparator.compare(min, e) > 0) min
 = e
 }
 return min
}
* Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.
* Since Kotlin("1.4")
public fun
LongArray.minWithOrNull(comparator: Comparator<in Long>): Long? {
 if (isEmpty()) return null
 var min
 = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0) min = e
 }
 return min
}
* Returns the first element having the smallest value according to the provided [comparator]
or `null` if there are no elements.
* Since Kotlin("1.4")
public fun FloatArray.minWithOrNull(comparator:
Comparator<in Float>): Float? {
 if (isEmpty()) return null
 var min = this[0]
 for (i in 1..lastIndex) {
 val
e = this[i]
 if (comparator.compare(min, e) > 0) min = e
 }
 return min
}
* Returns the first
element having the smallest value according to the provided [comparator]
or `null` if there are no elements.
* Since Kotlin("1.4")
public fun
DoubleArray.minWithOrNull(comparator: Comparator<in Double>): Double? {
 if (isEmpty()) return null
 var min
 = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0) min =
e
 }
 return min
}
* Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.
* Since Kotlin("1.4")
public fun
BooleanArray.minWithOrNull(comparator: Comparator<in Boolean>): Boolean? {
 if (isEmpty()) return null
 var min
 = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0) min =
e
 }
 return min
}
* Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.
* Since Kotlin("1.4")
public fun
CharArray.minWithOrNull(comparator: Comparator<in
Char>): Char? {
 if (isEmpty()) return null
 var min = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0) min = e
 }
 return min
}
* Returns `true` if the array has no
elements.
* @sample samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun <T> Array<out
T>.none(): Boolean {
 return isEmpty()
}
* Returns `true` if the array has no elements.
* @sample
samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun ByteArray.none(): Boolean {
 return
isEmpty()
}
* Returns `true` if the array has no elements.
* @sample
samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun ShortArray.none(): Boolean {
 return
isEmpty()
}
* Returns `true` if the array has no elements.
* @sample
samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun IntArray.none(): Boolean {
 return
isEmpty()
}
* Returns `true` if the array has no elements.
* @sample
samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun LongArray.none(): Boolean {
 return isEmpty()
}
* Returns `true` if the array has no
elements.
* @sample samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun FloatArray.none():
Boolean {
 return isEmpty()
}
* Returns `true` if the array has no elements.
* @sample
samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun DoubleArray.none(): Boolean {
 return
isEmpty()
}
* Returns `true` if the array has no elements.
* @sample
samples.collections.Collections.Aggregates.none
* Since Kotlin("1.4")
public fun BooleanArray.none(): Boolean {
 return
isEmpty()
}
* Returns `true` if the array has no elements.
* @sample

```



```

Unit): DoubleArray {
 return apply { for (element in this) action(element) }
}

/**
 * Performs the given [action] on each element and returns the array itself afterwards.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun BooleanArray.onEach(action: (Boolean) -> Unit): BooleanArray {
 return apply { for (element in this) action(element) }
}

/**
 * Performs the given [action] on each element and returns the array itself afterwards.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun CharArray.onEach(action: (Char) -> Unit): CharArray {
 return apply { for (element in this) action(element) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun <T> Array<out T>.onEachIndexed(action: (index: Int, T) -> Unit): Array<out T> {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the
 * array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun ByteArray.onEachIndexed(action: (index: Int, Byte) -> Unit): ByteArray {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun ShortArray.onEachIndexed(action: (index: Int, Short) -> Unit): ShortArray {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun IntArray.onEachIndexed(action: (index: Int, Int) -> Unit): IntArray {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun LongArray.onEachIndexed(action: (index: Int, Long) -> Unit): LongArray {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun FloatArray.onEachIndexed(action: (index: Int, Float) -> Unit): FloatArray {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun DoubleArray.onEachIndexed(action: (index: Int, Double) -> Unit): DoubleArray {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun BooleanArray.onEachIndexed(action: (index: Int, Boolean) -> Unit): BooleanArray {
 return apply { forEachIndexed(action) }
}

/**
 * Performs the given [action] on each element, providing sequential index with the element,
 * and returns the array itself afterwards.
 * @param [action] function that takes the index of an element and the element itself
 * and performs the action on the element.
 */

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*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun CharArray.onEachIndexed(action:
(index: Int, Char) -> Unit): CharArray {n return apply { forEachIndexed(action) }n}n/n/**n * Accumulates
value starting with the first element and applying [operation] from left to rightn * to current accumulator value and
each element.n * n * Throws an exception if this array is empty. If the array can be empty in an expected way,n *
please use [reduceOrNull] instead. It returns `null`
when its receiver is empty.n * n * @param [operation] function that takes current accumulator value and an
element,n * and calculates the next accumulator value.n * n * @sample
samples.collections.Collections.Aggregates.reducen *\/npublic inline fun <S, T : S> Array<out
T>.reduce(operation: (acc: S, T) -> S): S {n if (isEmpty())n throw UnsupportedOperationException("Empty
array can't be reduced.")n var accumulator: S = this[0]n for (index in 1..lastIndex) {n accumulator =
operation(accumulator, this[index])n }n return accumulatorn}n/n/**n * Accumulates value starting with the
first element and applying [operation] from left to rightn * to current accumulator value and each element.n * n *
Throws an exception if this array is empty. If the array can be empty in an expected way,n * please use
[reduceOrNull] instead. It returns `null` when its receiver is empty.n * n * @param [operation] function that takes
current accumulator value
and an element,n * and calculates the next accumulator value.n * n * @sample
samples.collections.Collections.Aggregates.reducen *\/npublic inline fun ByteArray.reduce(operation: (acc: Byte,
Byte) -> Byte): Byte {n if (isEmpty())n throw UnsupportedOperationException("Empty array can't be
reduced.")n var accumulator = this[0]n for (index in 1..lastIndex) {n accumulator =
operation(accumulator, this[index])n }n return accumulatorn}n/n/**n * Accumulates value starting with the
first element and applying [operation] from left to rightn * to current accumulator value and each element.n * n *
Throws an exception if this array is empty. If the array can be empty in an expected way,n * please use
[reduceOrNull] instead. It returns `null` when its receiver is empty.n * n * @param [operation] function that takes
current accumulator value and an element,n * and calculates the next accumulator value.n * n * @sample
samples.collections.Collections.Aggregates.reducen
*\/npublic inline fun ShortArray.reduce(operation: (acc: Short, Short) -> Short): Short {n if (isEmpty())n
throw UnsupportedOperationException("Empty array can't be reduced.")n var accumulator = this[0]n for
(index in 1..lastIndex) {n accumulator = operation(accumulator, this[index])n }n return
accumulatorn}n/n/**n * Accumulates value starting with the first element and applying [operation] from left to
rightn * to current accumulator value and each element.n * n * Throws an exception if this array is empty. If the
array can be empty in an expected way,n * please use [reduceOrNull] instead. It returns `null` when its receiver is
empty.n * n * @param [operation] function that takes current accumulator value and an element,n * and calculates
the next accumulator value.n * n * @sample samples.collections.Collections.Aggregates.reducen *\/npublic inline
fun IntArray.reduce(operation: (acc: Int, Int) -> Int): Int {n
if (isEmpty())n throw UnsupportedOperationException("Empty array can't be reduced.")n var
accumulator = this[0]n for (index in 1..lastIndex) {n accumulator = operation(accumulator, this[index])n
}n return accumulatorn}n/n/**n * Accumulates value starting with the first element and applying [operation]
from left to rightn * to current accumulator value and each element.n * n * Throws an exception if this array is
empty. If the array can be empty in an expected way,n * please use [reduceOrNull] instead. It returns `null` when its
receiver is empty.n * n * @param [operation] function that takes current accumulator value and an element,n *
and calculates the next accumulator value.n * n * @sample samples.collections.Collections.Aggregates.reducen
*\/npublic inline fun LongArray.reduce(operation: (acc: Long, Long) -> Long): Long {n if (isEmpty())n
throw UnsupportedOperationException("Empty array can't be reduced.")n var accumulator
= this[0]n for (index in 1..lastIndex) {n accumulator = operation(accumulator, this[index])n }n return
accumulatorn}n/n/**n * Accumulates value starting with the first element and applying [operation] from left to
rightn * to current accumulator value and each element.n * n * Throws an exception if this array is empty. If the
array can be empty in an expected way,n * please use [reduceOrNull] instead. It returns `null` when its receiver is
empty.n * n * @param [operation] function that takes current accumulator value and an element,n * and calculates

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the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n * \n\npublic inline
fun FloatArray.reduce(operation: (acc: Float, Float) -> Float): Float {\n if (isEmpty())\n throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation]
from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is
empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n * \n\npublic inline fun DoubleArray.reduce(operation: (acc: Double, Double) -> Double): Double {\n if
(isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator =
this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element
and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an
exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead.
It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator
value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n * \n\npublic inline fun BooleanArray.reduce(operation: (acc:
Boolean, Boolean) -> Boolean): Boolean {\n if (isEmpty())\n throw UnsupportedOperationException("Empty
array can't be reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n
* Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes
current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n * \n\npublic inline fun CharArray.reduce(operation: (acc: Char,
Char) -> Char): Char {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be
reduced.")\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element with its
index in the original array.\n * \n * Throws an exception if this array is empty. If the array can
be empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is
empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the
element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n * \n\npublic inline fun <S, T : S> Array<out
T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {\n if (isEmpty())\n throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator: S = this[0]\n for (index
in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Throws an
exception if this array is empty. If the array can be
empty in an expected way,\n * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is
empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value and the
element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n * \n\npublic inline fun ByteArray.reduceIndexed(operation:
(index: Int, acc: Byte, Byte) -> Byte): Byte {\n if (isEmpty())\n throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return

```



```

exception if this array is empty. If the array can be empty in an expected way,
 * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
 * @param
 [operation] function that takes the index of an element, current accumulator value and the element itself,
 * and
 calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduce
 *
 * public inline fun BooleanArray.reduceIndexed(operation: (index: Int, acc: Boolean, Boolean) -> Boolean):
 Boolean {
 if (isEmpty())
 throw UnsupportedOperationException("Empty array can't be reduced.")
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(index, accumulator,
 this[index])
 }
 return accumulator
 }
 * Accumulates value starting with the first element and
 applying [operation] from left to right
 * to current accumulator value and each element with its index in the
 original array.
 * Throws an exception if this array is empty. If the array can be empty in an expected
 way,
 * please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.
 * @param
 [operation] function that takes the index of an element, current accumulator value and the element itself,
 * and
 calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduce
 *
 * public inline fun CharArray.reduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): Char {
 if
 (isEmpty())
 throw UnsupportedOperationException("Empty array can't be reduced.")
 var accumulator =
 this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(index, accumulator, this[index])
 }
 return accumulator
 }
 * Accumulates value starting with the first element and applying [operation] from
 left to right
 * to current accumulator value and each element with its index in the original array.
 * Returns
 `null` if the array is empty.
 * @param [operation] function that takes the
 index of an element, current accumulator value and the element itself,
 * and calculates the next accumulator
 value.
 * @sample samples.collections.Collections.Aggregates.reduceOrNull
 *
 * @SinceKotlin("1.4")
 public inline fun <S, T : S> Array<out T>.reduceIndexedOrNull(operation: (index: Int,
 acc: S, T) -> S): S? {
 if (isEmpty())
 return null
 var accumulator: S = this[0]
 for (index in
 1..lastIndex) {
 accumulator = operation(index, accumulator, this[index])
 }
 return
 accumulator
 }
 * Accumulates value starting with the first element and applying [operation] from left to
 right
 * to current accumulator value and each element with its index in the original array.
 * Returns `null` if
 the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator
 value and the element itself,
 * and calculates the next accumulator value.
 * @sample
 samples.collections.Collections.Aggregates.reduceOrNull
 *
 * @SinceKotlin("1.4")
 public inline fun ByteArray.reduceIndexedOrNull(operation: (index: Int, acc: Byte,
 Byte) -> Byte): Byte? {
 if (isEmpty())
 return null
 var accumulator = this[0]
 for (index in
 1..lastIndex) {
 accumulator = operation(index, accumulator, this[index])
 }
 return
 accumulator
 }
 * Accumulates value starting with the first element and applying [operation] from left to
 right
 * to current accumulator value and each element with its index in the original array.
 * Returns `null` if
 the array is empty.
 * @param [operation] function that takes the index of an element, current accumulator
 value and the element itself,
 * and calculates the next accumulator value.
 * @sample
 samples.collections.Collections.Aggregates.reduceOrNull
 *
 * @SinceKotlin("1.4")
 public inline fun ShortArray.reduceIndexedOrNull(operation: (index: Int, acc: Short, Short) -> Short): Short? {
 if (isEmpty())
 return null
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(index,
 accumulator, this[index])
 }
 return accumulator
 }
 * Accumulates value starting with the first
 element and applying [operation] from left to right
 * to current accumulator value and each element with its index
 in the original array.
 * Returns `null` if the array is empty.
 * @param [operation] function that takes the
 index of an element, current accumulator value and the element itself,
 * and calculates the next accumulator
 value.
 * @sample samples.collections.Collections.Aggregates.reduceOrNull
 *
 * @SinceKotlin("1.4")
 public inline fun IntArray.reduceIndexedOrNull(operation: (index: Int, acc: Int, Int) ->
 Int): Int? {
 if (isEmpty())
 return null
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(index, accumulator, this[index])
 }
 return
 }

```

```

accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun
LongArray.reduceIndexedOrNull(operation: (index: Int, acc: Long, Long) -> Long): Long? {\n if (isEmpty())\n
return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index,
accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first
element and applying [operation] from left to right\n * to current accumulator value and each element with
its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that
takes the index of an element, current accumulator value and the element itself,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun FloatArray.reduceIndexedOrNull(operation: (index: Int, acc: Float,
Float) -> Float): Float? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns `null`
if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value and the element itself,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n *\n@SinceKotlin("1.4")\npublic inline fun
DoubleArray.reduceIndexedOrNull(operation: (index: Int, acc: Double, Double) -> Double): Double? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value and the element itself,\n * and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic
inline fun BooleanArray.reduceIndexedOrNull(operation: (index: Int, acc: Boolean, Boolean) -> Boolean):
Boolean? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n
accumulator = operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates
value starting with the first element and applying [operation] from left to right\n * to current accumulator value and
each element with its index in the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value and the element itself,\n * and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun CharArray.reduceIndexedOrNull(operation: (index: Int, acc: Char,
Char) -> Char): Char? {\n if (isEmpty())\n
return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index,
accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first
element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Array<out T>.reduceOrNull(operation: (acc: S, T) -> S): S? {\n if (isEmpty())\n return null\n var
accumulator: S = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n
}\n return accumulator\n}\n\n/**\n * Accumulates value starting with

```



the first element and applying [operation] from left to right  
to current accumulator value and each element.  
Returns `null` if the array is empty.  
@param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.  
@sample  
samples.collections.Collections.Aggregates.reduceOrNull

```

*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic inline fun
ByteArray.reduceOrNull(operation: (acc: Byte, Byte) -> Byte): Byte? {n if (isEmpty())n return nulln var
accumulator = this[0]n for (index in 1..lastIndex) {n accumulator = operation(accumulator, this[index])n
}n return accumulator}n/n/**n * Accumulates value starting with the first element and applying [operation]
from left to rightn * to current accumulator value and each element.n * Returns `null` if the array is empty.n *
n * @param [operation] function that takes current accumulator
value and an element,n * and calculates the next accumulator value.n * n * @sample
samples.collections.Collections.Aggregates.reduceOrNulln
*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic inline fun
ShortArray.reduceOrNull(operation: (acc: Short, Short) -> Short): Short? {n if (isEmpty())n return nulln
var accumulator = this[0]n for (index in 1..lastIndex) {n accumulator = operation(accumulator, this[index])n
}n return accumulator}n/n/**n * Accumulates value starting with the first element and applying [operation]
from left to rightn * to current accumulator value and each element.n * Returns `null` if the array is empty.n *
n * @param [operation] function that takes current accumulator value and an element,n * and calculates the next
accumulator value.n * n * @sample samples.collections.Collections.Aggregates.reduceOrNulln
*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic
inline fun IntArray.reduceOrNull(operation: (acc: Int, Int) -> Int): Int? {n if (isEmpty())n return nulln var
accumulator = this[0]n for (index in 1..lastIndex) {n accumulator = operation(accumulator, this[index])n
}n return accumulator}n/n/**n * Accumulates value starting with the first element and applying [operation]
from left to rightn * to current accumulator value and each element.n * Returns `null` if the array is empty.n *
n * @param [operation] function that takes current accumulator value and an element,n * and calculates the next
accumulator value.n * n * @sample samples.collections.Collections.Aggregates.reduceOrNulln
*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic inline fun
LongArray.reduceOrNull(operation: (acc: Long, Long) -> Long): Long? {n if (isEmpty())n return nulln
var accumulator = this[0]n for (index in 1..lastIndex) {n accumulator
= operation(accumulator, this[index])n }n return accumulator}n/n/**n * Accumulates value starting with
the first element and applying [operation] from left to rightn * to current accumulator value and each element.n *
n * Returns `null` if the array is empty.n * n * @param [operation] function that takes current accumulator value
and an element,n * and calculates the next accumulator value.n * n * @sample
samples.collections.Collections.Aggregates.reduceOrNulln
*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic inline fun
FloatArray.reduceOrNull(operation: (acc: Float, Float) -> Float): Float? {n if (isEmpty())n return nulln var
accumulator = this[0]n for (index in 1..lastIndex) {n accumulator = operation(accumulator, this[index])n
}n return accumulator}n/n/**n * Accumulates value starting with the first element and applying [operation]
from left to rightn * to current accumulator value and each
element.n * Returns `null` if the array is empty.n * n * @param [operation] function that takes current
accumulator value and an element,n * and calculates the next accumulator value.n * n * @sample
samples.collections.Collections.Aggregates.reduceOrNulln
*\/n@SinceKotlin("1.4")n@WasExperimental(ExperimentalStdlibApi::class)npublic inline fun
DoubleArray.reduceOrNull(operation: (acc: Double, Double) -> Double): Double? {n if (isEmpty())n return
nulln var accumulator = this[0]n for (index in 1..lastIndex) {n accumulator = operation(accumulator,
this[index])n }n return accumulator}n/n/**n * Accumulates value starting with the first element and
applying [operation] from left to rightn * to current accumulator value and each element.n * Returns `null` if
the array is empty.n * n * @param [operation] function that takes current accumulator value and an element,n *

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and calculates the next accumulator value.

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\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
BooleanArray.reduceOrNull(operation: (acc: Boolean, Boolean) -> Boolean): Boolean? {\n if (isEmpty())\n
return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharArray.reduceOrNull(operation: (acc: Char, Char) ->
Char): Char? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n
accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please
use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function
that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun <S, T : S> Array<out
T>.reduceRight(operation: (T, acc: S) -> S): S {\n var index = lastIndex\n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator:
S = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its
receiver is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun ByteArray.reduceRight(operation:
(Byte, acc: Byte) -> Byte): Byte {\n var index = lastIndex\n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while
(index >= 0) {\n accumulator = operation(get(index--),
accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Throws an
exception if this array is empty. If the array can be empty in an expected way,\n * please use [reduceRightOrNull]
instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun ShortArray.reduceRight(operation:
(Short, acc: Short) -> Short): Short {\n var index = lastIndex\n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while
(index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n *
Accumulates
value starting with the last element and applying [operation] from right to left\n * to each element and current
accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an expected
way,\n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun
IntArray.reduceRight(operation: (Int, acc: Int) -> Int): Int {\n var index = lastIndex\n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while

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(index >= 0) {\n accumulator = operation(get(index--), accumulator)\n } \n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the array\n * can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is\n * empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\n\npublic\ninline fun LongArray.reduceRight(operation: (Long, acc: Long) -> Long): Long {\n var index = lastIndex\n if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator =\n get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return\n accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to\n * left\n * to each element and current accumulator value.\n * \n * Throws an exception if\n * this array is empty. If the array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It\n * returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes an element and current\n * accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.reduceRight\n */\n\npublic inline fun FloatArray.reduceRight(operation:\n (Float, acc: Float) -> Float): Float {\n var index = lastIndex\n if (index < 0) throw\n UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while\n (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to\n * left\n * to each element and\n * current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an\n * expected way,\n * please\n * use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function\n * that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.reduceRight\n */\n\npublic inline fun\n * DoubleArray.reduceRight(operation: (Double, acc: Double) -> Double): Double {\n var index = lastIndex\n if\n (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator =\n get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return\n accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to\n * left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is empty. If the\n * array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its\n * receiver\n * is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n * and\n * calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\n\npublic inline fun\n * BooleanArray.reduceRight(operation: (Boolean, acc: Boolean) -> Boolean): Boolean {\n var\n index = lastIndex\n if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var\n accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return\n accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]\n * from right to left\n * to each element and current accumulator value.\n * \n * Throws an exception if this array is\n * empty. If the array can be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null`\n * when its receiver is empty.\n * \n * @param [operation] function that takes an element\n * and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.reduceRight\n */\n\npublic inline fun\n * CharArray.reduceRight(operation:\n (Char, acc: Char) -> Char): Char {\n var index = lastIndex\n if (index < 0) throw\n UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while\n (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to left\n * to each element with\n * its index in the original array and current accumulator value.\n * \n * Throws an exception if this array is empty. If\n * the array can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null`
```

when its receiver is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself

and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample

```

samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun <S, T : S> Array<out
T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {\n var index = lastIndex\n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator: S = get(index--)\n while
(index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Throws an
exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation]
function that takes the
index of an element, the element itself and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun
ByteArray.reduceRightIndexed(operation: (index: Int, Byte, acc: Byte) -> Byte): Byte {\n var index = lastIndex\n
if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator =
get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n
 }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element with its index in the original array and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param
[operation] function that takes the index of an element, the element itself and current accumulator value,\n * and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n
*^\npublic inline fun ShortArray.reduceRightIndexed(operation: (index: Int, Short, acc: Short) -> Short): Short {\n
var index = lastIndex\n if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n
var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Throws an exception if this array is empty. If the array can be empty in an
expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes the index of an element, the element
itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun
IntArray.reduceRightIndexed(operation: (index: Int, Int, acc: Int) -> Int): Int {\n var index = lastIndex\n if (index
< 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n
while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n
return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element with its index in the original array and current accumulator value.\n * \n * Throws an
exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightIndexedOrNull]
instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceRight\n *^\npublic inline fun
LongArray.reduceRightIndexed(operation: (index: Int, Long, acc: Long) -> Long): Long {\n var index =
lastIndex\n if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var
accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element with its index in the original array and

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its index in the original array and current accumulator value.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n \* \n \* @SinceKotlin("1.4")\n public inline fun ByteArray.reduceRightIndexedOrNull(operation: (index: Int, Byte, acc: Byte) -> Byte): Byte? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n }\n \n \* Accumulates value starting with the last element and applying [operation] from right to left\n \* to each element with its index in the original array and current accumulator value.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n \* \n \* @SinceKotlin("1.4")\n public inline fun ShortArray.reduceRightIndexedOrNull(operation: (index: Int, Short, acc: Short) -> Short): Short? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n }\n \n \* Accumulates value starting with the last element and applying [operation] from right to left\n \* to each element with its index in the original array and current accumulator value.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n \* \n \* @SinceKotlin("1.4")\n public inline fun IntArray.reduceRightIndexedOrNull(operation: (index: Int, Int, acc: Int) -> Int): Int? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n }\n \n \* Accumulates value starting with the last element and applying [operation] from right to left\n \* to each element with its index in the original array and current accumulator value.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n \* \n \* @SinceKotlin("1.4")\n public inline fun LongArray.reduceRightIndexedOrNull(operation: (index: Int, Long, acc: Long) -> Long): Long? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n }\n \n \* Accumulates value starting with the last element and applying [operation] from right to left\n \* to each element with its index in the original array and current accumulator value.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n \* \n \* @SinceKotlin("1.4")\n public inline fun FloatArray.reduceRightIndexedOrNull(operation: (index: Int, Float, acc: Float) -> Float): Float? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n }\n \n \* Accumulates value starting with the last element and applying [operation] from right to left\n \* to each element with its index in the original array and current accumulator value.\n \* \n \* Returns `null` if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, the element itself and current accumulator value,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n \* \n \* @SinceKotlin("1.4")\n public inline fun DoubleArray.reduceRightIndexedOrNull(operation: (index: Int, Double, acc: Double) -> Double): Double? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index),

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accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the last element and applying [operation] from right to left\n * to each element with its index in the original
array and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation]
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next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun BooleanArray.reduceRightIndexedOrNull(operation: (index: Int,
Boolean, acc: Boolean) -> Boolean): Boolean? {\n var index = lastIndex\n if (index < 0) return null\n var
accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element with its index in the original array
and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function
that takes the index of an element, the element itself and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun CharArray.reduceRightIndexedOrNull(operation: (index: Int, Char,
acc: Char) -> Char): Char? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n
while (index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from
right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes an element and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S>
Array<out T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {\n var index = lastIndex\n if (index < 0)
return null\n var accumulator: S = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--),
accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun ByteArray.reduceRightOrNull(operation: (Byte, acc: Byte) -> Byte): Byte? {\n var index = lastIndex\n
if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
ShortArray.reduceRightOrNull(operation: (Short, acc: Short) -> Short): Short? {\n var index = lastIndex\n if
(index < 0) return null\n var accumulator = get(index--)\n
while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param
[operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
IntArray.reduceRightOrNull(operation: (Int, acc: Int) -> Int): Int? {\n var index = lastIndex\n if (index < 0)
return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--),

```

```

accumulator)\n } \n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n
* \n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
LongArray.reduceRightOrNull(operation: (Long, acc: Long) -> Long): Long? {\n var index = lastIndex\n if
(index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n } \n return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator
value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
FloatArray.reduceRightOrNull(operation: (Float, acc: Float) -> Float): Float? {\n var index = lastIndex\n if
(index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n } \n return accumulator\n}\n\n/**\n * Accumulates value starting with the
last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
inline fun DoubleArray.reduceRightOrNull(operation: (Double, acc: Double) -> Double): Double? {\n var index
= lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n
accumulator = operation(get(index--), accumulator)\n } \n return accumulator\n}\n\n/**\n * Accumulates value
starting with the last element and applying [operation] from right to left\n * to each element and current accumulator
value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and
current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
BooleanArray.reduceRightOrNull(operation: (Boolean, acc: Boolean) -> Boolean): Boolean? {\n var index =
lastIndex\n if (index < 0) return null\n
var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--),
accumulator)\n } \n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and
applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if
the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value,\n *
and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharArray.reduceRightOrNull(operation: (Char, acc: Char) -> Char): Char? {\n var index = lastIndex\n if (index
< 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n } \n return accumulator\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun

```



```

<T, R> Array<out T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (element in this) {
 accumulator = operation(accumulator, element)
 result.add(accumulator)
 }
 return result
}

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample
samples.collections.Collections.Aggregates.runningFold

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <R> ByteArray.runningFold(initial: R, operation: (acc: R, Byte) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (element in this) {
 accumulator = operation(accumulator, element)
 result.add(accumulator)
 }
 return result
}

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample
samples.collections.Collections.Aggregates.runningFold

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <R> ShortArray.runningFold(initial: R, operation: (acc: R, Short) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (element in this) {
 accumulator = operation(accumulator, element)
 result.add(accumulator)
 }
 return result
}

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample
samples.collections.Collections.Aggregates.runningFold

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <R> IntArray.runningFold(initial: R, operation: (acc: R, Int) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (element in this) {
 accumulator = operation(accumulator, element)
 result.add(accumulator)
 }
 return result
}

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample
samples.collections.Collections.Aggregates.runningFold

*SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <R> LongArray.runningFold(initial: R, operation: (acc: R, Long) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (element in this) {
 accumulator = operation(accumulator, element)
 result.add(accumulator)
 }
 return result
}

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample
samples.collections.Collections.Aggregates.runningFold

```

```
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.runningFold(initial: R,
operation: (acc: R, Float) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator =
operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list
containing successive
accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.runningFold(initial: R,
operation: (acc: R, Double) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result =
ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n
accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n *
Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.runningFold(initial:
R, operation: (acc: R, Boolean) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result =
ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n
accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n *
Returns a
list containing successive accumulation values generated by applying [operation] from left to right\n * to each
element and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n *
@param [operation] function that takes current accumulator value and an element, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.runningFold(initial: R,
operation: (acc: R, Char) -> R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(size
+ 1).apply { add(initial) }\n var accumulator = initial\n for (element in this) {\n accumulator =
operation(accumulator, element)\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns
a list containing successive accumulation values generated by applying [operation] from left to right\n * to each
element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note
that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous
value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator
value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R>
Array<out T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n if (isEmpty())
return listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n
for (index in indices) {\n accumulator = operation(index, accumulator, this[index])\n
 result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function
should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
```



```

for (index in indices) {
 accumulator = operation(index, accumulator, this[index])
}
result.add(accumulator)
}
return result
}

```

`runningFold` Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value. @sample samples.collections.Collections.Aggregates.runningFold

```

*\/@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <R>
DoubleArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (index in indices) {
 accumulator = operation(index, accumulator, this[index])
 }
 result.add(accumulator)
}

```

`runningFoldIndexed` Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value. @sample samples.collections.Collections.Aggregates.runningFoldIndexed

```

*\/@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <R>
BooleanArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (index in indices) {
 accumulator = operation(index, accumulator, this[index])
 }
 result.add(accumulator)
}

```

`runningFoldIndexed` Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original array and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value. @sample samples.collections.Collections.Aggregates.runningFoldIndexed

```

*\/@SinceKotlin("1.4")@kotlin.internal.InlineOnly
public inline fun <R>
CharArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (index in indices) {
 accumulator = operation(index, accumulator, this[index])
 }
 result.add(accumulator)
}

```

`runningFoldIndexed` Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with the first element of this array. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and the element, and calculates the next accumulator value. @sample samples.collections.Collections.Aggregates.runningReduce

```

*\/@SinceKotlin("1.4")@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <S, T : S>
Array<out T>.runningReduce(operation: (acc: S, T) -> S): List<S> {
 if (isEmpty()) return emptyList()
 var accumulator: S = this[0]
 val result = ArrayList<S>(size).apply { add(accumulator) }
 for (index in 1 until size) {
 accumulator = operation(accumulator, this[index])
 result.add(accumulator)
 }
 return result
}

```

`runningReduce` Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with the first element of this array. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value. @sample

samples.collections.Collections.Aggregates.runningReduce\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.runningReduce(operation:
(acc: Byte, Byte) -> Byte): List<Byte> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Byte>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator
```

```
value that starts with the first element of this array.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.runningReduce\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.runningReduce(operation:
(acc: Short, Short) -> Short): List<Short> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Short>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function
that takes current accumulator
```

```
value and an element, and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.runningReduce\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.runningReduce(operation: (acc:
Int, Int) -> Int): List<Int> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result =
ArrayList<Int>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.runningReduce\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.runningReduce(operation:
(acc: Long, Long) -> Long): List<Long> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Long>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.runningReduce\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.runningReduce(operation:
(acc:
Float, Float) -> Float): List<Float> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Float>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator =
operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
```

samples.collections.Collections.Aggregates.runningReduce\n

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.runningReduce(operation:
(acc: Double, Double) -> Double): List<Double> {\n if (isEmpty()) return emptyList()\n var accumulator =
this[0]\n val
```

result = ArrayList<Double>(size).apply { add(accumulator) } for (index in 1 until size) { accumulator = operation(accumulator, this[index]) result.add(accumulator) } return result

**\* Returns a list containing successive accumulation values generated by applying [operation] from left to right \* to each element and current accumulator value that starts with the first element of this array.**

**@param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.**

**@sample samples.collections.Collections.Aggregates.runningReduce**

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.runningReduce(operation: (acc: Boolean, Boolean) -> Boolean): List<Boolean> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Boolean>(size).apply { add(accumulator) } for (index in 1 until size) {\n accumulator
```

```
= operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right * to each element and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun CharArray.runningReduce(operation: (acc: Char, Char) -> Char): List<Char> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Char>(size).apply { add(accumulator) } for (index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Array<out T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): List<S> {\n if (isEmpty()) return emptyList()\n var accumulator: S = this[0]\n val result = ArrayList<S>(size).apply { add(accumulator) } for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ByteArray.runningReduceIndexed(operation: (index: Int, acc: Byte, Byte) -> Byte): List<Byte> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Byte>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.runningReduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): List<Short> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Short>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.runningReduceIndexed(operation: (index: Int, acc: Short, Short) -> Short): List<Short> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Short>(size).apply { add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right * to each element, its index in the original array and current accumulator value that starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
```

```

return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.runningReduceIndexed(operation: (index: Int, acc: Int, Int) -> Int): List<Int> {\n if (isEmpty()) return
emptyList()\n var accumulator = this[0]\n val result = ArrayList<Int>(size).apply { add(accumulator) }\n for
(index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns
a list containing successive accumulation values generated by applying [operation] from left to right\n * to each
element, its index in the original array and current accumulator value that starts with the first element of this array.\n
*\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.runningReduceIndexed(operation: (index: Int, acc: Long, Long) -> Long): List<Long> {\n if
(isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Long>(size).apply {
add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the
original array and current accumulator value that starts with the first element of this array.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value\n * and the element itself, and
calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.runningReduceIndexed(operation: (index: Int, acc: Float, Float) -> Float): List<Float> {\n if
(isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Float>(size).apply {
add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated
by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator
value that starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.runningReduceIndexed(operation: (index: Int, acc: Double, Double) -> Double): List<Double> {\n if
(isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<Double>(size).apply {
add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * @param [operation] function that takes the index of an element,
current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.runningReduceIndexed(operation: (index: Int, acc: Boolean, Boolean) -> Boolean): List<Boolean>
{\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result =

```





```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> LongArray.scan(initial: R, operation: (acc: R, Long) -> R): List<R> {\n return\n runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by\n * applying [operation] from left to right\n * to each element and current accumulator\n * value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be\n * mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that\n * takes current accumulator value and an element, and calculates the next\n * accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> FloatArray.scan(initial: R, operation: (acc: R, Float) -> R): List<R> {\n return\n runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by\n * applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]\n * value.\n * \n * Note that `acc` value passed to [operation] function should not be\n * mutated;\n * otherwise it would affect the previous value in resulting\n * list.\n * \n * @param [operation] function that takes current accumulator value and an\n * element, and calculates the next accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> DoubleArray.scan(initial: R, operation: (acc: R, Double) -> R): List<R> {\n return\n runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by\n * applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]\n * value.\n * \n * Note that `acc` value passed to [operation] function should not be\n * mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value\n * and an element, and calculates the next accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> BooleanArray.scan(initial: R, operation: (acc: R, Boolean) -> R): List<R> {\n return\n runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by\n * applying [operation] from left to right\n * to each element and current accumulator value that starts with [initial]\n * value.\n * \n * Note that `acc` value passed to [operation] function should not be\n * mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current accumulator value\n * and an element, and calculates the next accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharArray.scan(initial: R, operation: (acc: R, Char) ->\n * R): List<R> {\n return\n runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive\n * accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original\n * array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to\n * [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * \n * @param [operation] function that takes the index of an element, current\n * accumulator value\n * and the element\n * itself, and calculates the next accumulator value.\n * \n * @sample\n * samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>\n * Array<out T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n return\n runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values\n * generated by applying [operation] from left to right\n * to each element, its index in the original array and current\n * accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should\n * not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]\n * function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the

```

```

next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun <R> ByteArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Byte) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array
and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value\n * and the element itself, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun <R> ShortArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Short) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed
to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n *
\n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element
itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun <R> IntArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Int) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting
list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun <R> LongArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Long) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator
value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun <R> FloatArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Float) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current
accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should
not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation]
function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the
next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun <R> DoubleArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Double) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values
generated by applying [operation] from left to right\n * to each element, its index in the original array and current

```

accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.scan\n \* \n \* @SinceKotlin("1.4")\n \* @WasExperimental(ExperimentalStdlibApi::class)\n \* @kotlin.internal.InlineOnly\n \* public

```
inline fun <R> BooleanArray.scanIndexed(initial: R, operation: (index: Int, acc: R, Boolean) -> R): List<R> {\n return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in the original array and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n * \n * @SinceKotlin("1.4")\n * @WasExperimental(ExperimentalStdlibApi::class)\n * @kotlin.internal.InlineOnly\n * public
```

```
inline fun <R> CharArray.scanIndexed(initial:
```

```
 R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n return runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun <T> Array<out T>.sumBy(selector: (T) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun ByteArray.sumBy(selector: (Byte) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun ShortArray.sumBy(selector: (Short) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun IntArray.sumBy(selector: (Int) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun LongArray.sumBy(selector: (Long) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun FloatArray.sumBy(selector: (Float) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun DoubleArray.sumBy(selector: (Double) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n * \n * @Deprecated("Use sumOf instead.")
```

```
ReplaceWith("this.sumOf(selector)")\n @DeprecatedSinceKotlin(warningSince = "1.5")\n public inline fun BooleanArray.sumBy(selector: (Boolean) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum +=
```

```

selector(element)\n } \n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
CharArray.sumBy(selector: (Char) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum +=
selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the
array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Array<out T>.sumByDouble(selector: (T) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
ByteArray.sumByDouble(selector: (Byte) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince
= "1.5")\npublic inline fun ShortArray.sumByDouble(selector: (Short) -> Double): Double {\n var sum: Double
= 0.0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum
of all values produced by [selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf
instead.\", ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline
fun IntArray.sumByDouble(selector: (Int) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
LongArray.sumByDouble(selector: (Long) -> Double): Double {\n var sum: Double = 0.0\n for (element
in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
FloatArray.sumByDouble(selector: (Float) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
DoubleArray.sumByDouble(selector: (Double) -> Double): Double {\n var sum: Double = 0.0\n for (element in
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
BooleanArray.sumByDouble(selector: (Boolean) -> Double): Double {\n var sum: Double = 0.0\n for (element
in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced
by [selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.\",
ReplaceWith("this.sumOf(selector)\"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
CharArray.sumByDouble(selector: (Char) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Array<out T>.sumOf(selector: (T) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.sumOf(selector: (Byte) -> Double): Double {\n var sum: Double = 0.toDouble()\n for (element in
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun ShortArray.sumOf(selector: (Short) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.sumOf(selector: (Int) -> Double): Double {\n var sum: Double = 0.toDouble()\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun LongArray.sumOf(selector: (Long) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sumOf(selector: (Float) -> Double): Double {\n var sum: Double = 0.toDouble()\n for (element in
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun DoubleArray.sumOf(selector: (Double) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic inline fun
BooleanArray.sumOf(selector: (Boolean) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun CharArray.sumOf(selector: (Char) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Array<out T>.sumOf(selector: (T) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this) {\n sum +=
selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic

```

```

inline fun ByteArray.sumOf(selector: (Byte) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfInt")
* kotlin.internal.InlineOnly
* public inline fun
ShortArray.sumOf(selector: (Short) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfInt")
* kotlin.internal.InlineOnly
* public
inline fun IntArray.sumOf(selector: (Int) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfInt")
* kotlin.internal.InlineOnly
* public inline fun
LongArray.sumOf(selector: (Long) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfInt")
* kotlin.internal.InlineOnly
* public
inline fun FloatArray.sumOf(selector: (Float) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfInt")
* kotlin.internal.InlineOnly
* public inline fun
DoubleArray.sumOf(selector: (Double) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfInt")
* kotlin.internal.InlineOnly
* public
inline fun BooleanArray.sumOf(selector: (Boolean) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfInt")
* kotlin.internal.InlineOnly
* public inline fun
CharArray.sumOf(selector: (Char) -> Int): Int {
 var sum: Int = 0.toInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfLong")
* kotlin.internal.InlineOnly
* public
inline fun <T> Array<out T>.sumOf(selector: (T) -> Long): Long {
 var sum: Long = 0.toLong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

* Since Kotlin("1.4")
* OptIn(kotlin.experimental.ExperimentalTypeInference::class)
* OverloadResolution
* ByLambdaReturnType
* kotlin.jvm.JvmName("sumOfLong")
* kotlin.internal.InlineOnly
* public inline fun
ByteArray.sumOf(selector: (Byte) -> Long): Long {
 var sum: Long = 0.toLong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
* Returns the sum of all values produced by [selector] function applied to each element in the array.

```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\ninline fun ShortArray.sumOf(selector: (Short) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun\nIntArray.sumOf(selector: (Int) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\ninline fun LongArray.sumOf(selector: (Long) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun\nFloatArray.sumOf(selector: (Float) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\ninline fun DoubleArray.sumOf(selector: (Double) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic inline fun\nBooleanArray.sumOf(selector: (Boolean) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic\ninline fun CharArray.sumOf(selector: (Char) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.sumOf(selector: (T) -> UInt): UInt {\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic\ninline fun ByteArray.sumOf(selector: (Byte) -> UInt): UInt {\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
```

ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n@WasExperimental(ExperimentalUnsignedType  
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun ShortArray.sumOf(selector: (Short) -> UInt): UInt {\n var  
sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by [selector] function  
applied to each element in the array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n@WasExperimental(ExperimentalUnsignedType  
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun IntArray.sumOf(selector: (Int) -> UInt): UInt {\n var  
sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by [selector] function applied to each element in the array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n@WasExperimental(ExperimentalUnsignedType  
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun LongArray.sumOf(selector: (Long) -> UInt): UInt {\n var  
sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by [selector] function applied to each  
element in the array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n@WasExperimental(ExperimentalUnsignedType  
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun FloatArray.sumOf(selector: (Float) -> UInt): UInt {\n var  
sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by [selector] function applied to each element in the array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n@WasExperimental(ExperimentalUnsignedType  
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun DoubleArray.sumOf(selector: (Double) -> UInt): UInt  
{\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return  
sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by [selector] function applied to each element in the  
array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n@WasExperimental(ExperimentalUnsignedType  
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun BooleanArray.sumOf(selector: (Boolean) -> UInt): UInt  
{\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return  
sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by [selector] function applied to each element in the  
array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfUInt\")\n@WasExperimental(ExperimentalUnsignedType  
s::class)\n@kotlin.internal.InlineOnly\npublic  
inline fun CharArray.sumOf(selector: (Char) -> UInt): UInt {\n var sum: UInt = 0.toUInt()\n for (element in  
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by  
[selector] function applied to each element in the array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfULong\")\n@WasExperimental(ExperimentalUnsignedTy  
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Array<out T>.sumOf(selector: (T) -> ULong):  
ULong {\n var sum: ULong = 0.toULong()\n for (element in this) {\n sum += selector(element)\n }\n  
return sum\n}\n\n/\*\n \*  
Returns the sum of all values produced by [selector] function applied to each element in  
the array.\n

\*\n@SinceKotlin(\"1.5\")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution  
ByLambdaReturnType\n@kotlin.jvm.JvmName(\"sumOfULong\")\n@WasExperimental(ExperimentalUnsignedTy  
pes::class)\n@kotlin.internal.InlineOnly\npublic



```

inline fun ByteArray.sumOf(selector: (Byte) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun ShortArray.sumOf(selector: (Short) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun IntArray.sumOf(selector: (Int) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun LongArray.sumOf(selector: (Long) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun FloatArray.sumOf(selector: (Float) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun DoubleArray.sumOf(selector: (Double) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun BooleanArray.sumOf(selector: (Boolean) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns the sum of all values produced by [selector] function applied to each element in the array.

*SinceKotlin("1.5")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.jvm.JvmName("sumOfULong")@WasExperimental(ExperimentalUnsignedTypes::class)@kotlin.internal.InlineOnly
public inline fun CharArray.sumOf(selector: (Char) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}
// Returns an original collection containing all the non-null elements, throwing an [IllegalArgumentException] if there are any null elements.

*public fun <T : Any> Array<T?>.requireNonNulls(): Array<T> {
 for (element in this) {
 if (element == null) {
 throw IllegalArgumentException("null element found in $this.")
 }
 }
 @Suppress("UNCHECKED_CAST")
 return this as Array<T>
}
// Splits the original array into pair

```

of lists, \n \* where \*first\* list contains elements for which [predicate] yielded `true`, \n \* while \*second\* list contains elements for which [predicate] yielded `false`. \n \* \n \* @sample

```

samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun <T> Array<out T>.partition(predicate:
(T) -> Boolean): Pair<List<T>, List<T>> {\n val first = ArrayList<T>()\n val second = ArrayList<T>()\n for
(element in this) {\n if (predicate(element)) {\n first.add(element)\n } else {\n
second.add(element)\n }\n }\n return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of
lists,\n * where *first* list contains elements for which [predicate] yielded `true`, \n * while *second* list contains
elements for which [predicate] yielded `false`. \n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
ByteArray.partition(predicate: (Byte) -> Boolean): Pair<List<Byte>, List<Byte>> {\n val first =
ArrayList<Byte>()\n val second = ArrayList<Byte>()\n for (element in this) {\n if (predicate(element)) {\n
first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which [predicate] yielded
`true`, \n * while *second* list contains elements for which [predicate] yielded `false`. \n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n *\npublic inline fun
ShortArray.partition(predicate: (Short) -> Boolean): Pair<List<Short>, List<Short>> {\n val first =
ArrayList<Short>()\n val second = ArrayList<Short>()\n for (element in this) {\n if (predicate(element)) {\n
first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`, \n * while *second* list contains elements for which [predicate] yielded `false`. \n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n
*\npublic inline fun IntArray.partition(predicate: (Int) -> Boolean): Pair<List<Int>, List<Int>> {\n val first =
ArrayList<Int>()\n val second = ArrayList<Int>()\n for (element in this) {\n if (predicate(element)) {\n
first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`, \n * while *second* list contains elements for which [predicate] yielded `false`. \n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n
*\npublic inline fun LongArray.partition(predicate: (Long) -> Boolean): Pair<List<Long>, List<Long>> {\n val first =
ArrayList<Long>()\n val second = ArrayList<Long>()\n for (element in this) {\n if (predicate(element)) {\n
first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first*
list contains elements for which [predicate] yielded `true`, \n * while *second* list contains elements for which
[predicate] yielded `false`. \n * \n * @sample
samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n
*\npublic inline fun FloatArray.partition(predicate: (Float) -> Boolean): Pair<List<Float>, List<Float>> {\n val first =
ArrayList<Float>()\n val second = ArrayList<Float>()\n for (element in this) {\n if (predicate(element)) {\n
first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`, \n * while *second* list contains elements for which [predicate] yielded `false`. \n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n
*\npublic inline fun DoubleArray.partition(predicate: (Double) -> Boolean): Pair<List<Double>, List<Double>>
{\n val first = ArrayList<Double>()\n val second = ArrayList<Double>()\n for (element in this) {\n if
(predicate(element)) {\n first.add(element)\n } else {\n second.add(element)\n }\n }\n
return Pair(first, second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains
elements for which [predicate] yielded `true`, \n * while *second* list contains elements for which [predicate]
yielded `false`. \n * \n * @sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n

```

```

*public inline fun BooleanArray.partition(predicate: (Boolean) -> Boolean): Pair<List<Boolean>,
List<Boolean>> {\n val first = ArrayList<Boolean>()\n val second = ArrayList<Boolean>()\n for (element in
this) {\n if (predicate(element)) {\n first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first,
second)\n}\n\n/**\n * Splits the original array into pair of lists,\n * where *first* list contains elements for which
[predicate] yielded `true`,\n * while *second* list contains elements for which [predicate] yielded `false`.\n * \n *
@sample samples.collections.Arrays.Transformations.partitionArrayOfPrimitives\n */\npublic inline fun
CharArray.partition(predicate: (Char) -> Boolean): Pair<List<Char>, List<Char>> {\n val first =
ArrayList<Char>()\n val second = ArrayList<Char>()\n for (element in this) {\n if (predicate(element)) {\n
 first.add(element)\n } else {\n second.add(element)\n }\n }\n return Pair(first,
second)\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the
same index.\n * The returned list has length of the shortest collection.\n * \n *
@sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <T, R> Array<out
T>.zip(other: Array<out R>): List<Pair<T, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a
list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The returned list has
length of the shortest collection.\n * \n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic
infix fun <R> ByteArray.zip(other: Array<out R>): List<Pair<Byte, R>> {\n return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <R> ShortArray.zip(other: Array<out
R>): List<Pair<Short, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
<R> IntArray.zip(other: Array<out R>): List<Pair<Int, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The
returned list has length of the shortest collection.\n * \n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <R> LongArray.zip(other: Array<out
R>): List<Pair<Long, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
<R> FloatArray.zip(other: Array<out R>): List<Pair<Float, R>> {\n return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <R> DoubleArray.zip(other: Array<out
R>): List<Pair<Double, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun
<R> BooleanArray.zip(other: Array<out R>): List<Pair<Boolean, R>> {\n return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n */\npublic infix fun <R> CharArray.zip(other: Array<out R>):
List<Pair<Char, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values built from the
elements of `this` array and the [other] array with the same index\n * using the provided [transform] function
applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n */\npublic inline fun <T, R, V> Array<out
T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V): List<V> {\n val size = minOf(size, other.size)\n val
list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n }\n return
list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other]

```

```

array with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
ByteArray.zip(other: Array<out R>, transform: (a: Byte, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n
}\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
ShortArray.zip(other: Array<out R>, transform: (a: Short, b: R) -> V): List<V> {\n val
size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
IntArray.zip(other: Array<out R>, transform: (a: Int, b: R) -> V): List<V> {\n val size = minOf(size, other.size)\n
val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n
}\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array with the same
index\n * using the provided [transform] function applied to each pair of elements.\n *
The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
LongArray.zip(other: Array<out R>, transform: (a: Long, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n
}\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
FloatArray.zip(other: Array<out R>, transform: (a: Float, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i],
other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the
[other] array with the same index\n * using the provided [transform] function applied to each pair of elements.\n *
The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
DoubleArray.zip(other: Array<out R>, transform: (a: Double, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n
}\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\npublic inline fun <R, V> BooleanArray.zip(other: Array<out R>, transform: (a: Boolean, b: R) -> V): List<V>
{\n val size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \npublic inline fun <R, V>
CharArray.zip(other: Array<out R>, transform: (a: Char, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n
}\n return list\n}\n\n/**\n * Returns a list of pairs

```

```

built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun
<T, R> Array<out T>.zip(other: Iterable<R>): List<Pair<T, R>> {\n return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun <R> ByteArray.zip(other: Iterable<R>):
List<Pair<Byte, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the
elements of `this` collection and [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n * \n\npublic
infix fun <R> ShortArray.zip(other: Iterable<R>): List<Pair<Short, R>> {\n return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun <R> IntArray.zip(other: Iterable<R>):
List<Pair<Int, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the
elements of `this` collection and [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun <R>
LongArray.zip(other: Iterable<R>): List<Pair<Long, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` collection and [other] array with the same index.\n
* The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun <R> FloatArray.zip(other: Iterable<R>):
List<Pair<Float, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the
elements of `this` collection and [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun <R>
DoubleArray.zip(other: Iterable<R>): List<Pair<Double, R>> {\n return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun <R> BooleanArray.zip(other:
Iterable<R>): List<Pair<Boolean, R>> {\n
 return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this`
collection and [other] array with the same index.\n * The returned list has length of the shortest collection.\n * \n *
@sample samples.collections.Iterables.Operations.zipIterable\n * \n\npublic infix fun <R> CharArray.zip(other:
Iterable<R>): List<Pair<Char, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values
built from the elements of `this` array and the [other] collection with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n *
\n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \n\npublic inline fun <T, R, V>
Array<out T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {\n val arraySize = size\n val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n var i = 0\n for (element in other) {\n if (i >= arraySize) break\n list.add(transform(this[i++], element))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n * \n\npublic inline fun <R, V>
ByteArray.zip(other: Iterable<R>, transform: (a: Byte, b: R) -> V): List<V> {\n val arraySize = size\n val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n var i = 0\n for (element in other) {\n
 if (i >= arraySize) break\n list.add(transform(this[i++], element))\n }\n return list\n}\n\n/**\n * Returns a
list of values built from the elements of `this` array and the [other] collection with the same index\n * using
the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n * \n\npublic inline

```

```

fun <R, V> ShortArray.zip(other: Iterable<R>, transform: (a: Short, b: R) -> V): List<V> {
 val arraySize = size
 val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
 var i = 0
 for (element in other) {
 if (i >= arraySize) break
 list.add(transform(this[i++], element))
 }
 return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
IntArray.zip(other: Iterable<R>, transform:
(a: Int, b: R) -> V): List<V> {
 val arraySize = size
 val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
 var i = 0
 for (element in other) {
 if (i >= arraySize) break
 list.add(transform(this[i++], element))
 }
 return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
LongArray.zip(other: Iterable<R>, transform: (a: Long, b: R) -> V): List<V> {
 val arraySize = size
 val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
 var i = 0
 for (element in other) {
 if (i >= arraySize) break
 list.add(transform(this[i++], element))
 }
 return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
FloatArray.zip(other: Iterable<R>, transform: (a: Float, b: R) -> V): List<V> {
 val arraySize = size
 val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
 var i = 0
 for (element in other) {
 if (i >= arraySize) break
 list.add(transform(this[i++], element))
 }
 return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
DoubleArray.zip(other: Iterable<R>, transform: (a: Double, b: R) -> V): List<V> {
 val arraySize = size
 val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
 var i = 0
 for (element in other) {
 if (i >= arraySize) break
 list.add(transform(this[i++], element))
 }
 return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
BooleanArray.zip(other: Iterable<R>, transform: (a: Boolean, b: R) -> V): List<V> {
 val arraySize = size
 val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10),
arraySize))
 var i = 0
 for (element in other) {
 if (i >= arraySize) break
 list.add(transform(this[i++], element))
 }
 return list
}

Returns a list of values built from the elements of `this` array and the [other] collection with the same index using the provided [transform] function applied to each pair of elements. The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterableWithTransform

public inline fun <R, V>
CharArray.zip(other: Iterable<R>, transform: (a: Char, b: R) -> V): List<V> {
 val arraySize = size
 val list =
ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))
 var i = 0
 for (element in other) {
 if (i >= arraySize) break
 list.add(transform(this[i++], element))
 }
 return list
}

Returns a list of pairs built from the elements of `this` array and the [other] array with the same index. The returned list has length of the shortest collection.

@sample
samples.collections.Iterables.Operations.zipIterable

public infix fun ByteArray.zip(other: ByteArray):
List<Pair<Byte, Byte>> {
 return zip(other) { t1, t2 -> t1 to t2 }
}

Returns a list of pairs built from

```



with the same index\n \* using the provided [transform] function applied to each pair of elements.\n \* The returned list has length of the shortest array.\n \* \n \* @sample

```

samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <V>
FloatArray.zip(other: FloatArray, transform: (a: Float, b: Float) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size)
{\n list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the
elements of `this` array and the [other] array with the same index\n * using the provided [transform] function
applied to each pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <V>
DoubleArray.zip(other: DoubleArray, transform: (a: Double, b: Double) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i],
other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\npublic inline fun <V> BooleanArray.zip(other: BooleanArray, transform: (a: Boolean, b: Boolean) -> V):
List<V> {\n val size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
pair of elements.\n * The returned list has length of the shortest array.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *\npublic inline fun <V>
CharArray.zip(other: CharArray, transform: (a: Char, b: Char) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i],
other[i]))\n }\n return list\n}\n\n/**\n * Appends the string
from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If
the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n *
elements will be appended, followed by the [truncated] string (which defaults to `"...`).\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n *\npublic fun <T, A : Appendable> Array<out
T>.joinTo(buffer: A, separator: CharSequence = ``, ``, prefix: CharSequence = ``, postfix: CharSequence = ``,
limit: Int = -1, truncated: CharSequence = `"...`, transform: ((T) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1) buffer.append(separator)\n
 if (limit < 0 || count <= limit) {\n buffer.appendElement(element, transform)\n } else break\n }\n if
(limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n
return buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the
given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value
of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string
(which defaults to `"...`).\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n *\npublic fun
<A : Appendable> ByteArray.joinTo(buffer: A, separator: CharSequence = ``, ``, prefix: CharSequence = ``,
postfix: CharSequence = ``, limit: Int = -1, truncated: CharSequence = `"...`, transform: ((Byte) ->
CharSequence)? = null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count
> 1) buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else break\n }\n if (limit >= 0 && count > limit)
buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to `"...`).\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n *\npublic fun <A : Appendable>

```



```

ShortArray.joinTo(buffer: A, separator: CharSequence = "\", \", prefix: CharSequence = "\"", postfix: CharSequence
= "\"", limit: Int = -1, truncated: CharSequence = "...\", transform: ((Short) -> CharSequence)? = null): A {\n
buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1) buffer.append(separator)\n
 if (limit < 0 || count <= limit) {\n if (transform != null)\n buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else break\n }\n if (limit >= 0 && count > limit)
buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n */\n\npublic fun <A : Appendable> IntArray.joinTo(buffer:
A, separator: CharSequence = "\", \", prefix: CharSequence = "\"", postfix: CharSequence = "\"", limit: Int = -1,
truncated: CharSequence = "...\", transform: ((Int) ->
CharSequence)? = null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if
(++count > 1) buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n
buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else break\n
}\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return
buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of
[limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which
defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n */\n\npublic fun <A :
Appendable> LongArray.joinTo(buffer: A, separator:
CharSequence = "\", \", prefix: CharSequence = "\"", postfix: CharSequence = "\"", limit: Int = -1, truncated:
CharSequence = "...\", transform: ((Long) -> CharSequence)? = null): A {\n buffer.append(prefix)\n var count =
0\n for (element in this) {\n if (++count > 1) buffer.append(separator)\n if (limit < 0 || count <= limit) {\n
if (transform != null)\n buffer.append(transform(element))\n else\n buffer.append(element.toString())\n
 } else break\n }\n if (limit >= 0 && count > limit)
buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Appends the string from all the
elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection
could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will
be appended, followed by the [truncated] string (which defaults to
"...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n */\n\npublic fun <A :
Appendable> FloatArray.joinTo(buffer: A, separator: CharSequence = "\", \", prefix: CharSequence = "\"", postfix:
CharSequence = "\"", limit: Int = -1, truncated: CharSequence = "...\", transform: ((Float) -> CharSequence)? =
null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1)
buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n
buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else break\n
}\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return
buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given
[prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify
a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the
[truncated] string (which defaults to "...").\n * \n * @sample
samples.collections.Collections.Transformations.joinTo\n */\n\npublic fun <A : Appendable>
DoubleArray.joinTo(buffer: A, separator: CharSequence = "\", \", prefix: CharSequence = "\"", postfix:
CharSequence = "\"", limit: Int = -1, truncated: CharSequence = "...\", transform: ((Double) -> CharSequence)? =
null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1)
buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n
buffer.append(transform(element))\n else\n buffer.append(element.toString())\n } else break\n
}\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return
buffer\n}

```

buffer\n}\n\n/\*\*\n \* Appends the string

from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n \* \n \* If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n \* elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n \* \n \* @sample samples.collections.Collections.Transformations.joinTo\n \* \npublic fun <A : Appendable>

```
BooleanArray.joinTo(buffer: A, separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Boolean) -> CharSequence)? = null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1)\n buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n buffer.append(transform(element))\n else\n buffer.append(element.toString())\n }\n else break\n }\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n * \npublic fun <A : Appendable> CharArray.joinTo(buffer: A, separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Char) -> CharSequence)? = null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1)\n buffer.append(separator)\n if (limit < 0 || count <= limit) {\n if (transform != null)\n buffer.append(transform(element))\n else\n buffer.append(element)\n }\n else break\n }\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n * \npublic fun <T> Array<out T>.joinToString(separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((T) -> CharSequence)? = null): String {\n return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n * \npublic fun ByteArray.joinToString(separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Byte) -> CharSequence)? = null): String {\n return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n * \npublic fun ShortArray.joinToString(separator: CharSequence = \", \", prefix: CharSequence = \"\", postfix: CharSequence = \"\", limit: Int = -1, truncated: CharSequence = \"...\", transform: ((Short) -> CharSequence)? = null): String {\n return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to \"...\").\n * \n * @sample
```

```

samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun IntArray.joinToString(separator:
CharSequence = \\", \\", prefix: CharSequence = \\", postfix: CharSequence = \\", limit: Int = -1, truncated:
CharSequence = \\"...\\", transform: ((Int) -> CharSequence)? = null): String {\\n return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\\n}\\n\\n/**\\n * Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.\\n * \\n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit]\\n * elements will be
appended, followed by the [truncated] string (which defaults to \\"...\\").\\n * \\n * @sample
samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun LongArray.joinToString(separator:
CharSequence = \\", \\", prefix: CharSequence = \\", postfix: CharSequence = \\", limit: Int = -1, truncated:
CharSequence = \\"...\\", transform: ((Long) -> CharSequence)? = null): String {\\n return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\\n}\\n\\n/**\\n * Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.\\n * \\n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case only the first [limit]\\n * elements will be
appended, followed by the [truncated] string (which defaults to \\"...\\").\\n * \\n * @sample
samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun FloatArray.joinToString(separator:
CharSequence = \\", \\", prefix: CharSequence = \\", postfix: CharSequence = \\", limit: Int = -1, truncated:
CharSequence = \\"...\\", transform: ((Float) -> CharSequence)? = null): String {\\n return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\\n}\\n\\n/**\\n * Creates a string
from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\\n * \\n * If
the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\\n *
elements will be appended, followed by the [truncated] string (which defaults to \\"...\\").\\n * \\n * @sample
samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun DoubleArray.joinToString(separator:
CharSequence = \\", \\", prefix: CharSequence = \\", postfix: CharSequence = \\", limit: Int = -1, truncated:
CharSequence = \\"...\\", transform: ((Double) -> CharSequence)? = null): String {\\n return joinTo(StringBuilder(),
separator, prefix, postfix, limit, truncated, transform).toString()\\n}\\n\\n/**\\n * Creates a string from all the elements
separated using [separator] and using the given [prefix] and [postfix] if supplied.\\n * \\n * If the collection could be
huge, you can specify a non-negative value of [limit], in which case
only the first [limit]\\n * elements will be appended, followed by the [truncated] string (which defaults to \\"...\\").\\n *
\\n * @sample
samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun
BooleanArray.joinToString(separator: CharSequence = \\", \\", prefix: CharSequence = \\", postfix: CharSequence =
\\", limit: Int = -1, truncated: CharSequence = \\"...\\", transform: ((Boolean) -> CharSequence)? = null): String {\\n
return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\\n}\\n\\n/**\\n * Creates
a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\\n * \\n
* If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first
[limit]\\n * elements will be appended, followed by the [truncated] string (which defaults to \\"...\\").\\n * \\n * @sample
samples.collections.Collections.Transformations.joinToString\n *^\\npublic fun
CharArray.joinToString(separator: CharSequence = \\", \\", prefix: CharSequence = \\", postfix: CharSequence =
\\", limit: Int = -1, truncated: CharSequence = \\"...\\", transform: ((Char) -> CharSequence)? = null): String {\\n
return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\\n}\\n\\n/**\\n * Creates
an [Iterable] instance that wraps the original array returning its elements when being iterated.\\n *^\\npublic fun <T>
Array<out T>.asIterable(): Iterable<T> {\\n if (isEmpty()) return emptyList()\\n return Iterable { this.iterator()
}\\n}\\n\\n/**\\n * Creates an [Iterable] instance that wraps the original array returning its elements when being
iterated.\\n *^\\npublic fun ByteArray.asIterable(): Iterable<Byte> {\\n if (isEmpty()) return emptyList()\\n return
Iterable { this.iterator() }\\n}\\n\\n/**\\n * Creates an [Iterable] instance that wraps the original array returning its
elements when being iterated.\\n *^\\npublic fun ShortArray.asIterable():
Iterable<Short> {\\n if (isEmpty()) return emptyList()\\n return Iterable { this.iterator() }\\n}\\n\\n/**\\n * Creates an
[Iterable] instance that wraps the original array returning its elements when being iterated.\\n *^\\npublic fun
IntArray.asIterable(): Iterable<Int> {\\n if (isEmpty()) return emptyList()\\n return Iterable { this.iterator()
}

```



```

= 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n ++count\n }\n return if (count
== 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n@kotlin.jvm.JvmName("averageOfLong")\npublic fun Array<out Long>.average(): Double {\n var sum:
Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n ++count\n }\n return
if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n@kotlin.jvm.JvmName("averageOfFloat")\npublic fun Array<out Float>.average(): Double {\n var sum:
Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n ++count\n }\n return
if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\n@kotlin.jvm.JvmName("averageOfDouble")\npublic fun Array<out Double>.average(): Double {\n var sum:
Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n ++count\n }\n return
if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\npublic fun ByteArray.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in
this) {\n sum += element\n ++count\n }\n return if (count ==
0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\npublic fun ShortArray.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n
*\npublic fun IntArray.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0)
Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the array.\n
*\npublic fun LongArray.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n
*\npublic fun FloatArray.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n ++count\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
an average value of elements in the array.\n
*\npublic fun DoubleArray.average(): Double {\n var sum: Double =
0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n ++count\n }\n return if (count
== 0) Double.NaN else sum / count\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfByte")\npublic fun Array<out Byte>.sum(): Int {\n var sum: Int = 0\n for
(element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the
array.\n
*\n@kotlin.jvm.JvmName("sumOfShort")\npublic fun Array<out Short>.sum(): Int {\n var sum: Int =
0\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfInt")\npublic fun Array<out Int>.sum(): Int {\n var sum: Int = 0\n for (element in this) {\n
sum += element\n }\n return
sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfLong")\npublic fun Array<out Long>.sum(): Long {\n var sum: Long = 0L\n for
(element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in
the array.\n
*\n@kotlin.jvm.JvmName("sumOfFloat")\npublic fun Array<out Float>.sum(): Float {\n var sum:
Float = 0.0f\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of
all elements in the array.\n
*\n@kotlin.jvm.JvmName("sumOfDouble")\npublic fun Array<out Double>.sum():
Double {\n var sum: Double = 0.0\n for (element in this) {\n sum += element\n }\n return
sum\n}\n\n/**\n * Returns
the sum of all elements in the array.\n
*\npublic fun ByteArray.sum(): Int {\n var sum: Int = 0\n for (element in
this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\npublic fun ShortArray.sum(): Int {\n var sum: Int = 0\n for (element in this) {\n sum += element\n }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\npublic fun IntArray.sum(): Int {\n var sum: Int = 0\n for (element in this) {\n sum += element\n }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\npublic fun LongArray.sum(): Long {\n var sum: Long = 0L\n for (element in this) {\n sum += element\n }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n
*\npublic

```

```

fun FloatArray.sum(): Float {
 var sum: Float = 0.0f
 for (element in this) {
 sum += element
 }
 return sum
}

Returns
the sum of all elements in the array.

public fun DoubleArray.sum(): Double {
 var sum: Double = 0.0
 for (element in this) {
 sum += element
 }
 return sum
}

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license that can be found in the license/LICENSE.txt file.

@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("RangesKt")
package
kotlin.ranges

NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib

import kotlin.random.*

Returns the
first element.

@throws NoSuchElementException if the progression is empty.

@SinceKotlin("1.7")
public fun IntProgression.first(): Int {
 if (isEmpty())
 throw
 NoSuchElementException("Progression $this is empty.")
 return this.first
}

Returns
the first element.

@throws NoSuchElementException if the progression is empty.

@SinceKotlin("1.7")
public fun LongProgression.first(): Long {
 if (isEmpty())
 throw
 NoSuchElementException("Progression $this is empty.")
 return this.first
}

Returns the first
element.

@throws NoSuchElementException if the progression is empty.

@SinceKotlin("1.7")
public fun CharProgression.first(): Char {
 if (isEmpty())
 throw
 NoSuchElementException("Progression $this is empty.")
 return this.first
}

Returns the first
element, or `null` if the progression is empty.

@SinceKotlin("1.7")
public fun IntProgression.firstOrNull():
Int? {
 return if (isEmpty()) null else this.first
}

Returns the first element, or `null` if the progression
is empty.

@SinceKotlin("1.7")
public fun LongProgression.firstOrNull(): Long? {
 return if (isEmpty())
 null else this.first
}

Returns the first element, or `null` if the progression is empty.

@SinceKotlin("1.7")
public fun
CharProgression.firstOrNull(): Char? {
 return if (isEmpty()) null else this.first
}

Returns the last
element.

@throws NoSuchElementException if the progression is empty.

@sample
samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun IntProgression.last(): Int {
 if (isEmpty())
 throw NoSuchElementException("Progression $this is empty.")
 return this.last
}

Returns the last element.

@throws NoSuchElementException if the progression is empty.

@sample
samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun
LongProgression.last(): Long {
 if (isEmpty())
 throw NoSuchElementException("Progression $this is
empty.")
 return this.last
}

Returns the last element.

@throws NoSuchElementException if
the progression
is empty.

@sample
samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun
CharProgression.last(): Char {
 if (isEmpty())
 throw NoSuchElementException("Progression $this is
empty.")
 return this.last
}

Returns the last element, or `null` if the progression is empty.

@sample
samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun
IntProgression.lastOrNull(): Int? {
 return if (isEmpty()) null else this.last
}

Returns the last element,
or `null` if the progression is empty.

@sample
samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun
LongProgression.lastOrNull(): Long? {
 return if (isEmpty()) null else
this.last
}

Returns the last element, or `null` if the progression is empty.

@sample
samples.collections.Collections.Elements.last

@SinceKotlin("1.7")
public fun
CharProgression.lastOrNull():
Char? {
 return if (isEmpty()) null else this.last
}

Returns a random element from this range.

@throws IllegalArgumentException if this range is empty.

@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
public inline fun IntRange.random(): Int {
 return
random(Random)
}

Returns a random element from this range.

@throws
IllegalArgumentException if this range is empty.

@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
public
inline fun LongRange.random(): Long {
 return random(Random)
}

Returns a random element from

```

```

this range.\n * \n * @throws IllegalArgumentException if this range is empty.\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharRange.random(): Char {\n return
random(Random)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness.\n * \n * @throws IllegalArgumentException if this range is empty.\n
*\n@SinceKotlin("1.3")\npublic
fun IntRange.random(random: Random): Int {\n try {\n return random.nextInt(this)\n } catch(e:
IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n *\n@SinceKotlin("1.3")\npublic fun
LongRange.random(random: Random): Long {\n try {\n return random.nextLong(this)\n } catch(e:
IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentException if this range is empty.\n *\n@SinceKotlin("1.3")\npublic fun
CharRange.random(random: Random): Char {\n try {\n return random.nextInt(first.code, last.code +
1).toChar()\n } catch(e: IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n
 }\n}\n\n/**\n * Returns a random element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun IntRange.randomOrNull(): Int? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random
element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun LongRange.randomOrNull(): Long? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c inline fun CharRange.randomOrNull(): Char? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun IntRange.randomOrNull(random: Random): Int? {\n if (isEmpty())\n return null\n return
random.nextInt(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
LongRange.randomOrNull(random: Random): Long? {\n if (isEmpty())\n return null\n return
random.nextLong(this)\n}\n\n/**\n * Returns a random element from this range using the specified source of
randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
CharRange.randomOrNull(random: Random): Char? {\n if (isEmpty())\n return null\n return
random.nextInt(first.code, last.code + 1).toChar()\n}\n\n/**\n * Returns `true` if this range contains the specified
[element].\n * \n * Always
returns `false` if the [element] is `null`.\n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline
operator fun IntRange.contains(element: Int?): Boolean {\n return element != null &&
contains(element)\n}\n\n/**\n * Returns `true` if this range contains the specified [element].\n * \n * Always returns
`false` if the [element] is `null`.\n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline operator
fun LongRange.contains(element: Long?): Boolean {\n return element != null && contains(element)\n}\n\n/**\n *
Returns `true` if this range contains the specified [element].\n * \n * Always returns `false` if the [element] is
`null`.\n *\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline operator fun
CharRange.contains(element: Char?): Boolean {\n return element != null && contains(element)\n}\n\n/**\n *
Checks if the specified [value] belongs to this range.\n *\n@kotlin.jvm.JvmName("intRangeContains")\npublic
operator fun ClosedRange<Int>.contains(value:

```

Byte): Boolean {  
return contains(value.toInt())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@kotlin.jvm.JvmName("longRangeContains")  
public operator fun  
ClosedRange<Long>.contains(value: Byte): Boolean {  
return contains(value.toLong())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@kotlin.jvm.JvmName("shortRangeContains")  
public operator fun  
ClosedRange<Short>.contains(value: Byte): Boolean {  
return contains(value.toShort())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")  
@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")  
@kotlin.jvm.JvmName("doubleRangeContains")  
public operator fun  
ClosedRange<Double>.contains(value: Byte): Boolean {  
return contains(value.toDouble())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")  
@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")  
@kotlin.jvm.JvmName("floatRangeContains")  
public operator fun  
ClosedRange<Float>.contains(value: Byte): Boolean {  
return contains(value.toFloat())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@kotlin.jvm.JvmName("intRangeContains")  
@SinceKotlin("1.7")  
@ExperimentalStdlibApi  
public operator fun  
OpenEndRange<Int>.contains(value: Byte): Boolean {  
return contains(value.toInt())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@kotlin.jvm.JvmName("longRangeContains")  
@SinceKotlin("1.7")  
@ExperimentalStdlibApi  
public operator fun  
OpenEndRange<Long>.contains(value: Byte): Boolean {  
return contains(value.toLong())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@kotlin.jvm.JvmName("shortRangeContains")  
@SinceKotlin("1.7")  
@ExperimentalStdlibApi  
public operator fun  
OpenEndRange<Short>.contains(value: Byte): Boolean {  
return contains(value.toShort())  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@kotlin.internal.InlineOnly  
public inline operator fun  
IntRange.contains(value: Byte): Boolean {  
return (this as ClosedRange<Int>).contains(value)  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@kotlin.internal.InlineOnly  
public inline operator fun  
LongRange.contains(value: Byte): Boolean {  
return (this as ClosedRange<Long>).contains(value)  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")  
@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")  
@kotlin.jvm.JvmName("intRangeContains")  
public operator fun  
ClosedRange<Int>.contains(value: Double): Boolean {  
return value.toIntExactOrNull().let { if (it != null) contains(it) else false }  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")  
@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")  
@kotlin.jvm.JvmName("longRangeContains")  
public operator fun  
ClosedRange<Long>.contains(value: Double): Boolean {  
return value.toLongExactOrNull().let { if (it != null) contains(it) else false }  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")  
@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")  
@kotlin.jvm.JvmName("byteRangeContains")  
public operator fun  
ClosedRange<Byte>.contains(value: Double): Boolean {  
return value.toByteExactOrNull().let { if (it != null) contains(it) else false }  
} }  
\*\*  
\* Checks if the specified [value] belongs to this range.  
@Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.")  
@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5")  
@kotlin.jvm.JvmName("shortRangeContains")  
public operator fun





specified [value] belongs to this range.\n

```

*\n@kotlin.jvm.JvmName("longRangeContains")\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Long>.contains(value: Int): Boolean {\n return contains(value.toLong())\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("byteRangeContains")\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Byte>.contains(value: Int): Boolean {\n return value.toByteExactOrNull().let { if (it
!= null) contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("shortRangeContains")\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Short>.contains(value: Int): Boolean {\n return value.toShortExactOrNull().let { if
(it != null) contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun LongRange.contains(value: Int): Boolean {\n return
(this as ClosedRange<Long>).contains(value)\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("intRangeContains")\npublic operator fun ClosedRange<Int>.contains(value: Long):
Boolean {\n return value.toIntExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("byteRangeContains")\npublic operator fun
ClosedRange<Byte>.contains(value: Long): Boolean {\n return value.toByteExactOrNull().let { if (it != null)
contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("shortRangeContains")\npublic operator fun ClosedRange<Short>.contains(value:
Long): Boolean {\n return value.toShortExactOrNull().let { if (it != null) contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("This `contains` operation mixing integer
and floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince =
"1.5")\n@kotlin.jvm.JvmName("doubleRangeContains")\npublic operator fun
ClosedRange<Double>.contains(value: Long): Boolean {\n return contains(value.toDouble())\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@Deprecated("This `contains` operation mixing integer
and floating point arguments has ambiguous semantics and is going to be
removed.")\n@DeprecatedSinceKotlin(warningSince = "1.3", errorSince
= "1.4", hiddenSince = "1.5")\n@kotlin.jvm.JvmName("floatRangeContains")\npublic operator fun
ClosedRange<Float>.contains(value: Long): Boolean {\n return contains(value.toFloat())\n}\n\n/**\n
* Checks if
the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("intRangeContains")\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Int>.contains(value: Long): Boolean {\n return value.toIntExactOrNull().let { if (it
!= null) contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("byteRangeContains")\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Byte>.contains(value: Long): Boolean {\n return value.toByteExactOrNull().let { if
(it != null) contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("shortRangeContains")\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic
operator fun OpenEndRange<Short>.contains(value: Long): Boolean {\n return value.toShortExactOrNull().let {
if (it != null) contains(it) else false }\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun IntRange.contains(value: Long): Boolean {\n return
(this as ClosedRange<Int>).contains(value)\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("intRangeContains")\npublic operator fun ClosedRange<Int>.contains(value: Short):
Boolean {\n return contains(value.toInt())\n}\n\n/**\n
* Checks if the specified [value] belongs to this range.\n
*\n@kotlin.jvm.JvmName("longRangeContains")\npublic operator fun ClosedRange<Long>.contains(value:
Short): Boolean {\n return contains(value.toLong())\n}\n\n/**\n
* Checks if the specified [value] belongs to this
range.\n
*\n@kotlin.jvm.JvmName("byteRangeContains")\npublic operator fun
ClosedRange<Byte>.contains(value:

```

Short): Boolean { \n return value.toByteExactOrNull().let { if (it != null) contains(it) else false } } \n \n /\*\* \n \* Checks if the specified [value] belongs to this range. \n \* \n \* @Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.") \n \* @DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5") \n \* @kotlin.jvm.JvmName("doubleRangeContains") \n \* public operator fun ClosedRange<Double>.contains(value: Short): Boolean { \n return contains(value.toDouble()) \n } \n \n /\*\* \n \* Checks if the specified [value] belongs to this range. \n \* \n \* @Deprecated("This `contains` operation mixing integer and floating point arguments has ambiguous semantics and is going to be removed.") \n \* @DeprecatedSinceKotlin(warningSince = "1.3", errorSince = "1.4", hiddenSince = "1.5") \n \* @kotlin.jvm.JvmName("floatRangeContains") \n \* public operator fun ClosedRange<Float>.contains(value: Short): Boolean { \n return contains(value.toFloat()) \n } \n \n /\*\* \n \* Checks if the specified [value] belongs to this range. \n \* \n \* @kotlin.jvm.JvmName("intRangeContains") \n \* @SinceKotlin("1.7") \n \* @ExperimentalStdlibApi \n \* public operator fun OpenEndRange<Int>.contains(value: Short): Boolean { \n return contains(value.toInt()) \n } \n \n /\*\* \n \* Checks if the specified [value] belongs to this range. \n \* \n \* @kotlin.jvm.JvmName("longRangeContains") \n \* @SinceKotlin("1.7") \n \* @ExperimentalStdlibApi \n \* public operator fun OpenEndRange<Long>.contains(value: Short): Boolean { \n return contains(value.toLong()) \n } \n \n /\*\* \n \* Checks if the specified [value] belongs to this range. \n \* \n \* @kotlin.jvm.JvmName("byteRangeContains") \n \* @SinceKotlin("1.7") \n \* @ExperimentalStdlibApi \n \* public operator fun OpenEndRange<Byte>.contains(value: Short): Boolean { \n return value.toByteExactOrNull().let { if (it != null) contains(it) else false } } \n \n /\*\* \n \* Checks if the specified [value] belongs to this range. \n \* \n \* @kotlin.internal.InlineOnly \n \* public inline operator fun IntRange.contains(value: Short): Boolean { \n return (this as ClosedRange<Int>).contains(value) \n } \n \n /\*\* \n \* Checks if the specified [value] belongs to this range. \n \* \n \* @kotlin.internal.InlineOnly \n \* public inline operator fun LongRange.contains(value: Short): Boolean { \n return (this as ClosedRange<Long>).contains(value) \n } \n \n /\*\* \n \* Returns a progression from this value down to the specified [to] value with the step -1. \n \* \n \* The [to] value should be less than or equal to `this` value. \n \* \n \* If the [to] value is greater than `this` value the returned progression is empty. \n \* \n \* @public infix fun Int.downTo(to: Byte): IntProgression { \n return IntProgression.fromClosedRange(this, to.toInt(), -1) \n } \n \n /\*\* \n \* Returns a progression from this value down to the specified [to] value with the step -1. \n \* \n \* The [to] value should be less than or equal to `this` value. \n \* \n \* If the [to] value is greater than `this` value the returned progression is empty. \n \* \n \* @public infix fun Long.downTo(to: Byte): LongProgression { \n return LongProgression.fromClosedRange(this, to.toLong(), -1L) \n } \n \n /\*\* \n \* Returns a progression from this value down to the specified [to] value with the step -1. \n \* \n \* The [to] value should be less than or equal to `this` value. \n \* \n \* If the [to] value is greater than `this` value the returned progression is empty. \n \* \n \* @public infix fun Byte.downTo(to: Byte): IntProgression { \n return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1) \n } \n \n /\*\* \n \* Returns a progression from this value down to the specified [to] value with the step -1. \n \* \n \* The [to] value should be less than or equal to `this` value. \n \* \n \* If the [to] value is greater than `this` value the returned progression is empty. \n \* \n \* @public infix fun Short.downTo(to: Byte): IntProgression { \n return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1) \n } \n \n /\*\* \n \* Returns a progression from this value down to the specified [to] value with the step -1. \n \* \n \* The [to] value should be less than or equal to `this` value. \n \* \n \* If the [to] value is greater than `this` value the returned progression is empty. \n \* \n \* @public infix fun Char.downTo(to: Char): CharProgression { \n return CharProgression.fromClosedRange(this, to, -1) \n } \n \n /\*\* \n \* Returns a progression from this value down to the specified [to] value with the step -1. \n \* \n \* The [to] value should be less than or equal to `this` value. \n \* \n \* If the [to] value is greater than `this` value the returned progression is empty. \n \* \n \* @public infix fun Int.downTo(to: Int): IntProgression { \n return IntProgression.fromClosedRange(this, to, -1) \n } \n \n /\*\* \n \* Returns a progression from this value down to the specified [to] value with the step -1. \n \* \n \* The [to] value should be less than or equal to `this` value. \n \* \n \* If the [to] value is greater than `this` value the returned progression is empty. \n \* \n \* @public infix fun

`Long.downTo(to: Int): LongProgression` {\n return LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Byte.downTo(to: Int): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to, -1)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Short.downTo(to: Int): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to, -1)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Int.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this.toLong(), to, -1L)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Long.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this, to, -1L)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Byte.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this.toLong(), to, -1L)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Short.downTo(to: Long): LongProgression {\n return LongProgression.fromClosedRange(this.toLong(), to, -1L)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Int.downTo(to: Short): IntProgression {\n return IntProgression.fromClosedRange(this, to.toInt(), -1)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Long.downTo(to: Short): LongProgression {\n return LongProgression.fromClosedRange(this, to.toLong(), -1L)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Byte.downTo(to: Short): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/\*\*\n \* Returns a progression from this value down to the specified [to] value with the step -1.\n \* \n \* The [to] value should be less than or equal to `this` value.\n \* If the [to] value is greater than `this` value the returned progression is empty.\n \*/\npublic infix fun Short.downTo(to: Short): IntProgression {\n return IntProgression.fromClosedRange(this.toInt(), to.toInt(), -1)\n}\n\n/\*\*\n \* Returns a progression that goes over the same range in the opposite direction with the same step.\n \*/\npublic fun IntProgression.reversed(): IntProgression {\n return IntProgression.fromClosedRange(last, first, -step)\n}\n\n/\*\*\n \* Returns a progression that goes over the same range in the opposite direction with the same step.\n \*/\npublic fun LongProgression.reversed(): LongProgression {\n return LongProgression.fromClosedRange(last, first, -step)\n}\n\n/\*\*\n \* Returns a progression that goes over the same range in the opposite direction with the same step.\n \*/\npublic fun CharProgression.reversed(): CharProgression {\n return CharProgression.fromClosedRange(last, first, -step)\n}\n\n/\*\*\n \* Returns a progression that goes over the same range with the given step.\n \*/\npublic infix fun IntProgression.step(step: Int): IntProgression {\n checkStepIsPositive(step > 0, step)\n return IntProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/\*\*\n \* Returns a progression that goes over the same range with the given step.\n \*/\npublic infix fun LongProgression.step(step: Long): LongProgression {\n checkStepIsPositive(step > 0, step)\n return

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LongProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a progression
that goes over the same range with the given step.\n */\npublic infix fun CharProgression.step(step: Int):
CharProgression {\n checkStepIsPositive(step > 0, step)\n return CharProgression.fromClosedRange(first, last, if
(this.step > 0) step else -step)\n}\n\ninternal fun Int.toByteExactOrNull(): Byte? {\n return if (this in
Byte.MIN_VALUE.toInt()..Byte.MAX_VALUE.toInt()) this.toByte() else null\n}\n\ninternal fun
Long.toByteExactOrNull(): Byte? {\n return if (this in
Byte.MIN_VALUE.toLong()..Byte.MAX_VALUE.toLong()) this.toByte() else null\n}\n\ninternal fun
Short.toByteExactOrNull(): Byte? {\n return if (this in
Byte.MIN_VALUE.toShort()..Byte.MAX_VALUE.toShort())
 this.toByte() else null\n}\n\ninternal fun Double.toByteExactOrNull(): Byte? {\n return if (this in
Byte.MIN_VALUE.toDouble()..Byte.MAX_VALUE.toDouble()) this.toInt().toByte() else null\n}\n\ninternal fun
Float.toByteExactOrNull(): Byte? {\n return if (this in
Byte.MIN_VALUE.toFloat()..Byte.MAX_VALUE.toFloat()) this.toInt().toByte() else null\n}\n\ninternal fun
Long.toIntExactOrNull(): Int? {\n return if (this in Int.MIN_VALUE.toLong()..Int.MAX_VALUE.toLong())
this.toInt() else null\n}\n\ninternal fun Double.toIntExactOrNull(): Int? {\n return if (this in
Int.MIN_VALUE.toDouble()..Int.MAX_VALUE.toDouble()) this.toInt() else null\n}\n\ninternal fun
Float.toIntExactOrNull(): Int? {\n return if (this in Int.MIN_VALUE.toFloat()..Int.MAX_VALUE.toFloat())
this.toInt() else null\n}\n\ninternal fun Double.toLongExactOrNull(): Long? {\n return if (this in
Long.MIN_VALUE.toDouble()..Long.MAX_VALUE.toDouble()) this.toLong() else null\n}\n\ninternal
fun Float.toLongExactOrNull(): Long? {\n return if (this in
Long.MIN_VALUE.toFloat()..Long.MAX_VALUE.toFloat()) this.toLong() else null\n}\n\ninternal fun
Int.toShortExactOrNull(): Short? {\n return if (this in Short.MIN_VALUE.toInt()..Short.MAX_VALUE.toInt())
this.toShort() else null\n}\n\ninternal fun Long.toShortExactOrNull(): Short? {\n return if (this in
Short.MIN_VALUE.toLong()..Short.MAX_VALUE.toLong()) this.toShort() else null\n}\n\ninternal fun
Double.toShortExactOrNull(): Short? {\n return if (this in
Short.MIN_VALUE.toDouble()..Short.MAX_VALUE.toDouble()) this.toInt().toShort() else null\n}\n\ninternal fun
Float.toShortExactOrNull(): Short? {\n return if (this in
Short.MIN_VALUE.toFloat()..Short.MAX_VALUE.toFloat()) this.toInt().toShort() else null\n}\n\n/**\n * Returns
a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to
`this` value, then the returned range is empty.\n */\npublic infix
fun Int.until(to: Byte): IntRange {\n return this .. (to.toInt() - 1).toInt()\n}\n\n/**\n * Returns a range from this
value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then
the returned range is empty.\n */\npublic infix fun Long.until(to: Byte): LongRange {\n return this .. (to.toLong() -
1).toLong()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If
the [to] value is less than or equal to `this` value, then the returned range is empty.\n */\npublic infix fun Byte.until(to:
Byte): IntRange {\n return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n/**\n * Returns a range from this value up to
but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned
range is empty.\n */\npublic infix fun Short.until(to: Byte): IntRange {\n return this.toInt() .. (to.toInt() -
1).toInt()\n}\n\n/**\n * Returns
a range from this value up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to
`this` value, then the returned range is empty.\n */\npublic infix fun Char.until(to: Char): CharRange {\n if (to <=
'\u0000') return CharRange.EMPTY\n return this .. (to - 1).toChar()\n}\n\n/**\n * Returns a range from this value
up to but excluding the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the
returned range is empty.\n */\npublic infix fun Int.until(to: Int): IntRange {\n if (to <= Int.MIN_VALUE) return
IntRange.EMPTY\n return this .. (to - 1).toInt()\n}\n\n/**\n * Returns a range from this value up to but excluding
the specified [to] value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is
empty.\n */\npublic infix fun Long.until(to: Int): LongRange {\n return this .. (to.toLong() -
1).toLong()\n}\n\n/**\n * Returns a range from this value up to

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but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Byte.until(to: Int): IntRange {\n if (to <= Int.MIN\_VALUE) return IntRange.EMPTY\n return this.toInt() .. (to - 1).toInt()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Short.until(to: Int): IntRange {\n if (to <= Int.MIN\_VALUE) return IntRange.EMPTY\n return this.toInt() .. (to - 1).toInt()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Int.until(to: Long): LongRange {\n if (to <= Long.MIN\_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Long.until(to: Long): LongRange {\n if (to <= Long.MIN\_VALUE) return LongRange.EMPTY\n return this .. (to - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Byte.until(to: Long): LongRange {\n if (to <= Long.MIN\_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Short.until(to: Long): LongRange {\n if (to <= Long.MIN\_VALUE) return LongRange.EMPTY\n return this.toLong() .. (to - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Int.until(to: Short): IntRange {\n return this .. (to.toInt() - 1).toInt()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Long.until(to: Short): LongRange {\n return this .. (to.toLong() - 1).toLong()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Byte.until(to: Short): IntRange {\n return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n/\*\*\n \* Returns a range from this value up to but excluding the specified [to] value.\n \* \n \* If the [to] value is less than or equal to `this` value, then the returned range is empty.\n \*/\npublic infix fun Short.until(to: Short): IntRange {\n return this.toInt() .. (to.toInt() - 1).toInt()\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeastComparable\n \*/\npublic fun <T : Comparable<T>> T.coerceAtLeast(minimumValue: T): T {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Byte.coerceAtLeast(minimumValue: Byte): Byte {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Short.coerceAtLeast(minimumValue: Short): Short {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Int.coerceAtLeast(minimumValue: Int): Int {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less than the specified [minimumValue].\n \* \n \* @return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n \* \n \* @sample samples.comparisons.ComparableOps.coerceAtLeast\n \*/\npublic fun Long.coerceAtLeast(minimumValue: Long): Long {\n return if (this < minimumValue) minimumValue else this\n}\n\n/\*\*\n \* Ensures that this value is not less

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than the specified [minimumValue].\n * \n * @return this value if it's greater than or equal to the [minimumValue]
or the [minimumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtLeast\n
*/\npublic fun Float.coerceAtLeast(minimumValue: Float): Float {\n return if (this < minimumValue)
minimumValue else this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n *
@return this value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n *
@sample samples.comparisons.ComparableOps.coerceAtLeast\n */\npublic fun
Double.coerceAtLeast(minimumValue: Double): Double {\n return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value
is not greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostComparable\n */\npublic fun <T : Comparable<T>>
T.coerceAtMost(maximumValue: T): T {\n return if (this > maximumValue) maximumValue else this\n}\n\n/**\n
* Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this value if it's less
than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun Byte.coerceAtMost(maximumValue: Byte):
Byte {\n return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not
greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n
*/\npublic fun Short.coerceAtMost(maximumValue: Short): Short {\n return if (this > maximumValue)
maximumValue else this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n *
\n * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n *
@sample samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun Int.coerceAtMost(maximumValue:
Int): Int {\n return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not
greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun Long.coerceAtMost(maximumValue: Long):
Long {\n return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is not
greater than the specified [maximumValue].\n *
\n * @return this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n *
@sample samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun
Float.coerceAtMost(maximumValue: Float): Float {\n return if (this > maximumValue) maximumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMost\n */\npublic fun Double.coerceAtMost(maximumValue:
Double): Double {\n return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this
value lies in the specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range,
or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
[maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceInComparable\n
*/\npublic fun <T : Comparable<T>> T.coerceIn(minimumValue: T?, maximumValue: T?): T {\n if
(minimumValue !== null && maximumValue !== null) {\n if (minimumValue > maximumValue) throw
IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n if (this >
maximumValue) return maximumValue\n }\n else {\n if (minimumValue !== null && this <
minimumValue) return minimumValue\n if (maximumValue !== null && this > maximumValue) return
maximumValue\n }\n return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample

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samples.comparisons.ComparableOps.coerceIn\n *^\npublic
fun Byte.coerceIn(minimumValue: Byte, maximumValue: Byte): Byte {\n if (minimumValue > maximumValue)
throw IllegalArgumentException("\n\nCannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.\n\n")\n if (this < minimumValue) return minimumValue\n if (this > maximumValue)
return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceIn\n *^\npublic fun Short.coerceIn(minimumValue: Short,
maximumValue: Short): Short {\n if (minimumValue > maximumValue) throw
IllegalArgumentException("\n\nCannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.\n\n")\n if (this < minimumValue) return minimumValue\n
if (this > maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the
specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or
[minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
[maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceIn\n *^\npublic fun
Int.coerceIn(minimumValue: Int, maximumValue: Int): Int {\n if (minimumValue > maximumValue) throw
IllegalArgumentException("\n\nCannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.\n\n")\n if (this < minimumValue) return minimumValue\n if (this > maximumValue)
return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value
is greater than [maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceIn\n *^\npublic fun
Long.coerceIn(minimumValue: Long, maximumValue: Long): Long {\n if (minimumValue > maximumValue)
throw IllegalArgumentException("\n\nCannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.\n\n")\n if (this < minimumValue) return minimumValue\n if (this > maximumValue)
return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the specified range
[minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this value
is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceIn\n *^\npublic fun Float.coerceIn(minimumValue: Float,
maximumValue: Float): Float {\n if (minimumValue > maximumValue) throw
IllegalArgumentException("\n\nCannot coerce value to an empty range: maximum $maximumValue
is less than minimum $minimumValue.\n\n")\n if (this < minimumValue) return minimumValue\n if (this >
maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the specified
range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or [minimumValue] if this
value is less than [minimumValue], or [maximumValue] if this value is greater than [maximumValue].\n * \n *
@sample samples.comparisons.ComparableOps.coerceIn\n *^\npublic fun Double.coerceIn(minimumValue:
Double, maximumValue: Double): Double {\n if (minimumValue > maximumValue) throw
IllegalArgumentException("\n\nCannot coerce value to an empty range: maximum $maximumValue is less than
minimum $minimumValue.\n\n")\n if (this < minimumValue) return minimumValue\n if (this > maximumValue)
return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the specified [range].\n * \n *
@return this value if it's in the [range], or `range.start`
if this value is less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.\n * \n *
@sample samples.comparisons.ComparableOps.coerceInFloatingPointRange\n *^\n@SinceKotlin("1.1")\npublic
fun <T : Comparable<T>> T.coerceIn(range: ClosedFloatingPointRange<T>): T {\n if (range.isEmpty()) throw
IllegalArgumentException("\n\nCannot coerce value to an empty range: $range.\n\n")\n return when {\n // this <
start equiv to this <= start && !(this >= start)\n range.lessThanOrEqualTo(this, range.start) &&
!range.lessThanOrEqualTo(range.start, this) -> range.start\n // this > end equiv to this >= end && !(this <= end)\n
range.lessThanOrEqualTo(range.endInclusive, this) && !range.lessThanOrEqualTo(this, range.endInclusive) ->

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other value to this value. */n @kotlin.internal.InlineOnly\n
 public inline operator fun plus(other: UByte): UInt = this.toUInt().plus(other.toUInt())n /** Adds the other
value to this value. */n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UShort): UInt =
this.toUInt().plus(other.toUInt())n /** Adds the other value to this value. */n @kotlin.internal.InlineOnly\n
public inline operator fun plus(other: UInt): UInt = this.toUInt().plus(other)n /** Adds the other value to this
value. */n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: ULong): ULong =
this.toULong().plus(other)n\n /** Subtracts the other value from this value. */n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UByte): UInt = this.toUInt().minus(other.toUInt())n /** Subtracts the
other value from this value. */n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UShort):
UInt = this.toUInt().minus(other.toUInt())n /**
Subtracts the other value from this value. */n @kotlin.internal.InlineOnly\n public inline operator fun
minus(other: UInt): UInt = this.toUInt().minus(other)n /** Subtracts the other value from this value. */n
@kotlin.internal.InlineOnly\n public inline operator fun minus(other: ULong): ULong =
this.toULong().minus(other)n\n /** Multiplies this value by the other value. */n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UByte): UInt = this.toUInt().times(other.toUInt())n /** Multiplies this
value by the other value. */n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): UInt
= this.toUInt().times(other.toUInt())n /** Multiplies this value by the other value. */n
@kotlin.internal.InlineOnly\n public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)n
/** Multiplies this value by the other value. */n @kotlin.internal.InlineOnly\n public inline operator
fun times(other: ULong): ULong = this.toULong().times(other)n\n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UByte): UInt = this.toUInt().div(other.toUInt())n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UShort): UInt = this.toUInt().div(other.toUInt())n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UInt): UInt = this.toUInt().div(other)n /** Divides this value by the other value, truncating the
result to an integer that is closer to zero. */n @kotlin.internal.InlineOnly\n public inline operator fun div(other:
ULong): ULong = this.toULong().div(other)n\n /**\n
 * Calculates the remainder of truncating division of this value by the other value.\n * \n * The result is
always less than the divisor.\n */n @kotlin.internal.InlineOnly\n public inline operator fun rem(other:
UByte): UInt = this.toUInt().rem(other.toUInt())n /**\n * Calculates the remainder of truncating division of
this value by the other value.\n * \n * The result is always less than the divisor.\n */n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: UShort): UInt =
this.toUInt().rem(other.toUInt())n /**\n * Calculates the remainder of truncating division of this value by the
other value.\n * \n * The result is always less than the divisor.\n */n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: UInt): UInt = this.toUInt().rem(other)n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result is always
less than the divisor.\n */n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: ULong):
ULong = this.toULong().rem(other)n\n /**\n * Divides this value by the other value, flooring the result to an
integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and
truncating division are the same.\n */n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
UByte): UInt = this.toUInt().floorDiv(other.toUInt())n /**\n * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring
division and truncating division are the same.\n */n @kotlin.internal.InlineOnly\n public inline fun
floorDiv(other: UShort): UInt = this.toUInt().floorDiv(other.toUInt())n /**\n * Divides this value by the other
value, flooring the result to an integer that is closer
to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division are the
same.\n */n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): UInt =

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this.toUInt().floorDiv(other)\n /**\n * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)\n\n /**\n * Calculates the remainder of flooring division of this value by the
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders
of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline
fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()\n
/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is
always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating
division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort =
this.toUInt().mod(other.toUInt()).toUShort()\n\n /**\n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the
remainders of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n
public inline fun mod(other: UInt): UInt = this.toUInt().mod(other)\n\n /**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n
* For unsigned
* For unsigned
types, the remainders of flooring division and truncating division are the same.\n */\n
@kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n
/**\n * Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun inc(): UByte = UByte(data.inc())\n\n /**\n * Returns
this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n */\n
@kotlin.internal.InlineOnly\n public inline operator fun dec(): UByte = UByte(data.dec())\n\n /** Creates a
range from this value to the specified [other] value. */\n @kotlin.internal.InlineOnly\n public inline operator fun
rangeTo(other: UByte): UIntRange = UIntRange(this.toUInt(), other.toUInt())\n\n /**\n * Creates a range from
this value up to but excluding the specified [other] value.\n * \n * If the [other] value is less
than or equal to `this` value, then the returned range is empty.\n */\n @SinceKotlin("1.7")\n
@ExperimentalStdlibApi\n @kotlin.internal.InlineOnly\n public inline operator fun rangeUntil(other: UByte):
UIntRange = this.toUInt() until other.toUInt()\n\n /** Performs a bitwise AND operation between the two values.
*/\n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UByte): UByte = UByte(this.data and
other.data)\n\n /** Performs a bitwise OR operation between the two values. */\n @kotlin.internal.InlineOnly\n
public inline infix fun or(other: UByte): UByte = UByte(this.data or other.data)\n\n /** Performs a bitwise XOR
operation between the two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun xor(other: UByte):
UByte = UByte(this.data xor other.data)\n\n /** Inverts the bits in this value. */\n @kotlin.internal.InlineOnly\n
public inline fun inv(): UByte = UByte(data.inv())\n\n /**\n * Converts this
[UByte] value to [Byte].\n * \n * If this value is less than or equals to [Byte.MAX_VALUE], the resulting
`Byte` value represents\n * the same numerical value as this `UByte`. Otherwise the result is negative.\n * \n
* The resulting `Byte` value has the same binary representation as this `UByte` value.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data\n\n /**\n * Converts this [UByte] value to
[Short].\n * \n * The resulting `Short` value represents the same numerical value as this `UByte`. \n * \n *
The least significant 8 bits of the resulting `Short` value are the same as the bits of this `UByte` value, \n *
whereas the most significant 8 bits are filled with zeros.\n */\n @kotlin.internal.InlineOnly\n public inline fun
toShort(): Short = data.toShort() and 0xFF\n\n /**\n * Converts this [UByte] value to [Int].\n * \n * The
resulting `Int` value represents the same numerical value as
this `UByte`. \n * \n * The least significant 8 bits of the resulting `Int` value are the same as the bits of this
`UByte` value, \n * whereas the most significant 24 bits are filled with zeros.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toInt(): Int = data.toInt() and 0xFF\n\n /**\n * Converts this
[UByte] value to [Long].\n * \n * The resulting `Long` value represents the same numerical value as this
`UByte`. \n * \n * The least significant 8 bits of the resulting `Long` value are the same as the bits of this

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MAX_VALUE: UInt = UInt(-1)\n\n /**\n * The number of bytes used to represent an instance of UInt in a
binary form.\n */\n public const val SIZE_BYTES: Int = 4\n\n /**\n * The number of bits used to
represent an instance of UInt in a binary form.\n */\n public const val SIZE_BITS: Int = 32\n }\n\n /**\n * Compares this value with the specified value for order.\n * Returns zero if this value is equal to the specified
other value, a negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun compareTo(other: UByte): Int =
this.compareTo(other.toUInt())\n\n /**\n * Compares this value with the specified value for order.\n *
Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a
positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun
compareTo(other: UShort): Int = this.compareTo(other.toUInt())\n\n /**\n * Compares this value with the
specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n * or a positive number if it's greater than
other.\n */\n @kotlin.internal.InlineOnly\n @Suppress("OVERRIDE_BY_INLINE")\n public override
inline operator fun compareTo(other: UInt): Int = uintCompare(this.data, other.data)\n\n /**\n * Compares this
value with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a
negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun compareTo(other: ULong): Int =
this.toULong().compareTo(other)\n\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UByte): UInt = this.plus(other.toUInt())\n /** Adds the other value to this
value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UShort): UInt =
this.plus(other.toUInt())\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UInt): UInt = UInt(this.data.plus(other.data))\n /** Adds the other value to
this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: ULong): ULong =
this.toULong().plus(other)\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UByte): UInt = this.minus(other.toUInt())\n /** Subtracts the other value
from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UShort): UInt =
this.minus(other.toUInt())\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UInt): UInt = UInt(this.data.minus(other.data))\n /** Subtracts the other
value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: ULong): ULong
= this.toULong().minus(other)\n\n /** Multiplies this value
by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UByte): UInt =
this.times(other.toUInt())\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): UInt = this.times(other.toUInt())\n /** Multiplies this value by the
other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UInt): UInt =
UInt(this.data.times(other.data))\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: ULong): ULong =
this.toULong().times(other)\n\n /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UByte): UInt =
this.div(other.toUInt())\n /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UShort): UInt =
this.div(other.toUInt())\n /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UInt): UInt = uintDivide(this,
other)\n /** Divides this value by the other value, truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: ULong): ULong =
this.toULong().div(other)\n\n /**\n * Calculates the remainder of truncating division of this value by the other
value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: UByte): UInt = this.rem(other.toUInt())\n /**\n * Calculates the remainder of

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truncating division of this value by the other value.\n * \n * The result
is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other:
UShort): UInt = this.rem(other.toUInt())\n /**\n * Calculates the remainder of truncating division of this value
by the other value.\n * \n * The result is always less than the divisor.\n */\n @kotlin.internal.InlineOnly\n
public inline operator fun rem(other: UInt): UInt = uintRemainder(this, other)\n /**\n * Calculates the
remainder of truncating division of this value by the other value.\n * \n * The result is always less than the
divisor.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: ULong): ULong =
this.toULong().rem(other)\n\n /**\n * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n
public inline fun floorDiv(other: UByte): UInt = this.floorDiv(other.toUInt())\n /**\n * Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned types,
the results of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n
public inline fun floorDiv(other: UShort): UInt = this.floorDiv(other.toUInt())\n /**\n * Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned types,
the results of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n
public inline fun floorDiv(other: UInt): UInt = div(other)\n /**\n * Divides this value by the other value,
flooring the result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of
flooring division and
truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
ULong): ULong = this.toULong().floorDiv(other)\n\n /**\n * Calculates the remainder of flooring division of
this value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned
types, the remainders of flooring division and truncating division are the same.\n */\n
@kotlin.internal.InlineOnly\n public inline fun mod(other: UByte): UByte = this.mod(other.toUInt()).toUByte()\n
/**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is
always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating
division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort =
this.mod(other.toUInt()).toUShort()\n /**\n * Calculates the remainder
of flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n
* For unsigned types, the remainders of flooring division and truncating division are the same.\n */\n
@kotlin.internal.InlineOnly\n public inline fun mod(other: UInt): UInt = rem(other)\n /**\n * Calculates the
remainder of flooring division of this value by the other value.\n * \n * The result is always less than the
divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n
*/\n @kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong =
this.toULong().mod(other)\n\n /**\n * Returns this value incremented by one.\n * \n * @sample
samples.misc.Builtins.inc\n */\n @kotlin.internal.InlineOnly\n public inline operator fun inc(): UInt =
UInt(data.inc())\n\n /**\n * Returns this value decremented by one.\n * \n * @sample
samples.misc.Builtins.dec\n */\n @kotlin.internal.InlineOnly\n public inline operator fun dec():
UInt = UInt(data.dec())\n\n /**\n * Creates a range from this value to the specified [other] value. */\n
@kotlin.internal.InlineOnly\n public inline operator fun rangeTo(other: UInt): UIntRange = UIntRange(this,
other)\n\n /**\n * Creates a range from this value up to but excluding the specified [other] value.\n * \n * If
the [other] value is less than or equal to `this` value, then the returned range is empty.\n */\n
@SinceKotlin("1.7")\n @ExperimentalStdlibApi\n @kotlin.internal.InlineOnly\n public inline operator fun
rangeUntil(other: UInt): UIntRange = this until other\n\n /**\n * Shifts this value left by the [bitCount] number
of bits.\n * \n * Note that only the five lowest-order bits of the [bitCount] are used as the shift distance.\n *
The shift distance actually used is therefore always in the range `0..31`.\n
*/\n @kotlin.internal.InlineOnly\n public inline infix fun shl(bitCount: Int): UInt = UInt(data shl
bitCount)\n\n /**\n * Shifts this value right by the [bitCount] number of bits, filling the leftmost bits with

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zeros.\n * Note that only the five lowest-order bits of the [bitCount] are used as the shift distance.\n *
The shift distance actually used is therefore always in the range `0..31`.\n *
@kotlin.internal.InlineOnly\n
public inline infix fun shr(bitCount: Int): UInt = UInt(data ushr bitCount)\n\n /** Performs a bitwise AND
operation between the two values. */\n
@kotlin.internal.InlineOnly\n
public inline infix fun and(other: UInt):
UInt = UInt(this.data and other.data)\n\n /** Performs a bitwise OR operation between the two values. */\n
@kotlin.internal.InlineOnly\n
public inline infix fun or(other: UInt): UInt = UInt(this.data or other.data)\n\n /**
Performs a bitwise XOR operation between the two values. */\n
@kotlin.internal.InlineOnly\n
public inline infix fun xor(other: UInt): UInt = UInt(this.data xor other.data)\n\n /**
Inverts the bits in this value. */\n
@kotlin.internal.InlineOnly\n
public inline fun inv(): UInt =
UInt(data.inv())\n\n /**\n * Converts this [UInt] value to [Byte].\n * If this value is less than or equals
to [Byte.MAX_VALUE], the resulting `Byte` value represents\n * the same numerical value as this `UInt`.\n
*\n * The resulting `Byte` value is represented by the least significant 8 bits of this `UInt` value.\n * Note that
the resulting `Byte` value may be negative.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toByte():
Byte = data.toByte()\n\n /**\n * Converts this [UInt] value to [Short].\n * If this value is less than or
equals to [Short.MAX_VALUE], the resulting `Short` value represents\n * the same numerical value as this
`UInt`.\n * The resulting `Short` value is represented
by the least significant 16 bits of this `UInt` value.\n * Note that the resulting `Short` value may be negative.\n
*/\n
@kotlin.internal.InlineOnly\n
public inline fun toShort(): Short = data.toShort()\n\n /**\n * Converts this
[UInt] value to [Int].\n * If this value is less than or equals to [Int.MAX_VALUE], the resulting `Int` value
represents\n * the same numerical value as this `UInt`. Otherwise the result is negative.\n * The resulting
`Int` value has the same binary representation as this `UInt` value.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toInt(): Int = data\n\n /**\n * Converts this [UInt] value to [Long].\n * The resulting `Long`
value represents the same numerical value as this `UInt`.\n * The least significant 32 bits of the resulting
`Long` value are the same as the bits of this `UInt` value,\n * whereas the most significant 32 bits are filled with
zeros.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toLong(): Long = data.toLong() and 0xFFFF_FFFF\n\n /**\n * Converts this [UInt] value to [UByte].\n
*\n * If this value is less than or equals to
[UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical value as this `UInt`.\n
*\n * The resulting `UByte` value is represented by the least significant 8 bits of this `UInt` value.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toUByte(): UByte = data.toUByte()\n\n /**\n * Converts this
[UInt] value to [UShort].\n * If this value is less than or equals to [UShort.MAX_VALUE], the resulting
`UShort` value represents\n * the same numerical value as this `UInt`.\n * The resulting `UShort` value is
represented by the least significant 16 bits of this `UInt` value.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toUShort(): UShort = data.toUShort()\n\n /** Returns
this value. */\n
@kotlin.internal.InlineOnly\n
public inline fun toUInt(): UInt = this\n\n /**\n * Converts this
[UInt] value to [ULong].\n * The resulting `ULong` value represents the same numerical value as this
`UInt`.\n * The least significant 32 bits of the resulting `ULong` value are the same as the bits of this `UInt`
value,\n * whereas the most significant 32 bits are filled with zeros.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toULong(): ULong = ULong(data.toLong() and 0xFFFF_FFFF)\n\n /**\n * Converts this
[UInt] value to [Float].\n * The resulting value is the closest `Float` to this `UInt` value.\n * In case when
this `UInt` value is exactly between two `Float`s,\n * the one with zero at least significant bit of mantissa is
selected.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toFloat(): Float = this.toDouble().toFloat()\n\n /**\n * Converts this [UInt] value to
[Double].\n * The resulting `Double` value represents the same numerical value as this `UInt`.\n */\n
@kotlin.internal.InlineOnly\n
public inline fun toDouble(): Double = uintToDouble(data)\n\n public override
fun toString(): String = toLong().toString()\n\n}\n\n/**\n * Converts this [Byte] value to [UInt].\n * If this value
is positive, the resulting `UInt` value represents the same numerical value as this `Byte`.\n * The least significant
8 bits of the resulting `UInt` value are the same as the bits of this `Byte` value,\n * whereas the most significant 24

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bits are filled with the sign bit of this value.

```
\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Byte.toUInt(): UInt = UInt(this.toInt())\n/\n * Converts this [Short] value to [UInt].\n * If this value is positive, the resulting `UInt` value represents the same numerical value as this `Short`.\n * The least significant
```

16 bits of the resulting `UInt` value are the same as the bits of this `Short` value, whereas the most significant 16 bits are filled with the sign bit of this value.

```
\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Short.toUInt(): UInt = UInt(this.toInt())\n/\n * Converts this [Int] value to [UInt].\n * If this value is positive, the resulting `UInt` value represents the same numerical value as this `Int`.\n * The resulting `UInt` value has the same binary representation as this `Int` value.
```

```
\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Int.toUInt(): UInt = UInt(this)\n/\n * Converts this [Long] value to [UInt].\n * If this value is positive and less than or equals to [UInt.MAX_VALUE], the resulting `UInt` value represents the same numerical value as this `Long`.\n * The resulting `UInt` value is represented by the least significant 32 bits of this `Long` value.
```

```
\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Long.toUInt(): UInt = UInt(this.toInt())\n/\n * Converts this [Float] value to [UInt].\n * The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Float` value is negative or `NaN`, [UInt.MAX_VALUE] if it's bigger than `UInt.MAX_VALUE`.
```

```
\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun Float.toUInt(): UInt = doubleToUInt(this.toDouble())\n/\n * Converts this [Double] value to [UInt].\n * The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Double` value is negative or `NaN`, [UInt.MAX_VALUE] if it's bigger than `UInt.MAX_VALUE`.
```

```
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun Double.toUInt(): UInt = doubleToUInt(this)\n/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * Auto-generated file. DO NOT EDIT!\npackage kotlin\nimport kotlin.experimental.*
```

```
kotlin.jvm.\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@JvmInline\npublic value class UShort @kotlin.internal.IntrinsicConstEvaluation @PublishedApi internal
```

```
constructor(@PublishedApi internal val data: Short) : Comparable<UShort> {\n companion object {\n /**\n
```

```
 * A constant holding the minimum value an instance of UShort can have.\n *\n public const val MIN_VALUE: UShort = UShort(0)\n /**\n * A constant holding the maximum value an instance of UShort can have.\n *\n public const val MAX_VALUE: UShort = UShort(-1)
```

```
 /**\n * The number of bytes used to represent an instance of UShort in a binary form.\n *\n
```

```
public const val SIZE_BYTES: Int = 2\n /**\n * The number of bits used to represent an instance of UShort in a binary form.\n *\n public const val SIZE_BITS: Int = 16\n }\n /**\n * Compares this
```

```
value with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n
```

```
@kotlin.internal.InlineOnly\n public inline operator fun compareTo(other: UByte): Int =
```

```
this.toInt().compareTo(other.toInt())\n /**\n * Compares this value with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n
```

```
@Suppress("OVERRIDE_BY_INLINE")\n public override inline operator fun compareTo(other: UShort): Int = this.toInt().compareTo(other.toInt())\n /**\n * Compares this value with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a
```



```

positive number if it's greater than other.\n *^n @kotlin.internal.InlineOnly\n public inline operator fun
compareTo(other: UInt): Int = this.toUInt().compareTo(other)\n\n /**\n * Compares this value with the
specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n * or a positive number if it's greater than other.\n *^n @kotlin.internal.InlineOnly\n public inline operator fun compareTo(other: ULong): Int = this.toULong().compareTo(other)\n\n /** Adds the
other value to this value. *^n @kotlin.internal.InlineOnly\n
 public inline operator fun plus(other: UByte): UInt = this.toUInt().plus(other.toUInt())\n /** Adds the other
value to this value. *^n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UShort): UInt =
this.toUInt().plus(other.toUInt())\n /** Adds the other value to this value. *^n @kotlin.internal.InlineOnly\n
 public inline operator fun plus(other: UInt): UInt = this.toUInt().plus(other)\n /** Adds the other value to this
value. *^n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: ULong): ULong =
this.toULong().plus(other)\n\n /** Subtracts the other value from this value. *^n @kotlin.internal.InlineOnly\n
 public inline operator fun minus(other: UByte): UInt = this.toUInt().minus(other.toUInt())\n /** Subtracts the
other value from this value. *^n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UShort):
UInt = this.toUInt().minus(other.toUInt())\n
 /** Subtracts the other value from this value. *^n @kotlin.internal.InlineOnly\n public inline operator fun
minus(other: UInt): UInt = this.toUInt().minus(other)\n /** Subtracts the other value from this value. *^n
 @kotlin.internal.InlineOnly\n public inline operator fun minus(other: ULong): ULong =
this.toULong().minus(other)\n\n /** Multiplies this value by the other value. *^n @kotlin.internal.InlineOnly\n
 public inline operator fun times(other: UByte): UInt = this.toUInt().times(other.toUInt())\n /** Multiplies this
value by the other value. *^n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): UInt
= this.toUInt().times(other.toUInt())\n /** Multiplies this value by the other value. *^n
 @kotlin.internal.InlineOnly\n public inline operator fun times(other: UInt): UInt = this.toUInt().times(other)\n
 /** Multiplies this value by the other value. *^n @kotlin.internal.InlineOnly\n public inline operator
fun times(other: ULong): ULong = this.toULong().times(other)\n\n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. *^n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UByte): UInt = this.toUInt().div(other.toUInt())\n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. *^n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UShort): UInt = this.toUInt().div(other.toUInt())\n /** Divides this value by the other value,
truncating the result to an integer that is closer to zero. *^n @kotlin.internal.InlineOnly\n public inline operator
fun div(other: UInt): UInt = this.toUInt().div(other)\n /** Divides this value by the other value, truncating the
result to an integer that is closer to zero. *^n @kotlin.internal.InlineOnly\n public inline operator fun div(other:
ULong): ULong = this.toULong().div(other)\n\n /**\n * Calculates the remainder of truncating division of this value by the other value.\n * \n * The result is
always less than the divisor.\n *^n @kotlin.internal.InlineOnly\n public inline operator fun rem(other:
UByte): UInt = this.toUInt().rem(other.toUInt())\n /**\n * Calculates the remainder of truncating division of
this value by the other value.\n * \n * The result is always less than the divisor.\n *^n
 @kotlin.internal.InlineOnly\n public inline operator fun rem(other: UShort): UInt =
this.toUInt().rem(other.toUInt())\n /**\n * Calculates the remainder of truncating division of this value by the
other value.\n * \n * The result is always less than the divisor.\n *^n @kotlin.internal.InlineOnly\n
 public inline operator fun rem(other: UInt): UInt = this.toUInt().rem(other)\n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result is always
less than the divisor.\n *^n @kotlin.internal.InlineOnly\n public inline operator fun rem(other: ULong):
ULong = this.toULong().rem(other)\n\n /**\n * Divides this value by the other value, flooring the result to an
integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and
truncating division are the same.\n *^n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
UByte): UInt = this.toUInt().floorDiv(other.toUInt())\n /**\n * Divides this value by the other value, flooring
the result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring

```

```

division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun
floorDiv(other: UShort): UInt = this.toUInt().floorDiv(other.toUInt())\n /**\n * Divides this value by the other
value, flooring the result to an integer that is closer
to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division are the
same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: UInt): UInt =
this.toUInt().floorDiv(other)\n /**\n * Divides this value by the other value, flooring the result to an integer that
is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division and truncating division
are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong =
this.toULong().floorDiv(other)\n\n /**\n * Calculates the remainder of flooring division of this value by the
other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the remainders
of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline
fun mod(other: UByte): UByte = this.toUInt().mod(other.toUInt()).toUByte()\n
 /**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n * The result is
always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating
division are the same.\n */\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UShort): UShort =
this.toUInt().mod(other.toUInt()).toUShort()\n /**\n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the
remainders of flooring division and truncating division are the same.\n */\n @kotlin.internal.InlineOnly\n
public inline fun mod(other: UInt): UInt = this.toUInt().mod(other)\n /**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is always less than the divisor.\n * \n
 * For
 * For
 unsigned types, the remainders of flooring division and truncating division are the same.\n */\n
 @kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = this.toULong().mod(other)\n\n
 /**\n * Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n */\n
 @kotlin.internal.InlineOnly\n public inline operator fun inc(): UShort = UShort(data.inc())\n\n /**\n *
Returns this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n */\n
 @kotlin.internal.InlineOnly\n public inline operator fun dec(): UShort = UShort(data.dec())\n\n /** Creates a
range from this value to the specified [other] value. */\n @kotlin.internal.InlineOnly\n public inline operator fun
rangeTo(other: UShort): UIntRange = UIntRange(this.toUInt(), other.toUInt())\n\n /**\n * Creates a range from
this value up to but excluding the specified [other] value.\n * \n * If the [other] value is
less than or equal to `this` value, then the returned range is empty.\n */\n @SinceKotlin("1.7")\n
 @ExperimentalStdlibApi\n @kotlin.internal.InlineOnly\n public inline operator fun rangeUntil(other: UShort):
UIntRange = this.toUInt() until other.toUInt()\n\n /**\n * Performs a bitwise AND operation between the two values.
*/\n @kotlin.internal.InlineOnly\n public inline infix fun and(other: UShort): UShort = UShort(this.data and
other.data)\n\n /**\n * Performs a bitwise OR operation between the two values. */\n @kotlin.internal.InlineOnly\n
public inline infix fun or(other: UShort): UShort = UShort(this.data or other.data)\n\n /**\n * Performs a bitwise XOR
operation between the two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun xor(other: UShort):
UShort = UShort(this.data xor other.data)\n\n /**\n * Inverts the bits in this value. */\n @kotlin.internal.InlineOnly\n
public inline fun inv(): UShort = UShort(data.inv())\n\n /**\n
 * Converts this [UShort] value to [Byte].\n * \n * If this value is less than or equals to [Byte.MAX_VALUE],
the resulting `Byte` value represents\n * the same numerical value as this `UShort`.\n * \n * The resulting
`Byte` value is represented by the least significant 8 bits of this `UShort` value.\n * \n * Note that the resulting
`Byte` value may be negative.\n */\n @kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data.toByte()\n
 /**\n * Converts this [UShort] value to [Short].\n * \n * If this value is less than or equals to
[Short.MAX_VALUE], the resulting `Short` value represents\n * the same numerical value as this `UShort`.\n * \n
 * Otherwise the result is negative.\n * \n * The resulting `Short` value has the same binary representation as
this `UShort` value.\n */\n @kotlin.internal.InlineOnly\n public inline fun toShort(): Short = data\n\n /**\n
 * Converts this [UShort] value to [Int].\n */

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* The resulting `Int` value represents the same numerical value as this `UShort`.
 * The least significant 16 bits of the resulting `Int` value are the same as the bits of this `UShort` value,
 * whereas the most significant 16 bits are filled with zeros.
 @kotlin.internal.InlineOnly
 public inline fun toInt(): Int = data.toInt() and 0xFFFF
 /**
 * Converts this [UShort] value to [Long].
 * The resulting `Long` value represents the same numerical value as this `UShort`.
 * The least significant 16 bits of the resulting `Long` value are the same as the bits of this `UShort` value,
 * whereas the most significant 48 bits are filled with zeros.
 @kotlin.internal.InlineOnly
 public inline fun toLong(): Long = data.toLong() and 0xFFFF
 /**
 * Converts this [UShort] value to [UByte].
 * If this value is less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents
 * the same numerical value as this `UShort`.
 * The resulting `UByte` value is represented by the least significant 8 bits of this `UShort` value.
 @kotlin.internal.InlineOnly
 public inline fun toUByte(): UByte = data.toUByte()
 /** Returns this value.
 @kotlin.internal.InlineOnly
 public inline fun toUShort(): UShort = this
 /**
 * Converts this [UShort] value to [UInt].
 * The resulting `UInt` value represents the same numerical value as this `UShort`.
 * The least significant 16 bits of the resulting `UInt` value are the same as the bits of this `UShort` value,
 * whereas the most significant 16 bits are filled with zeros.
 @kotlin.internal.InlineOnly
 public inline fun toUInt(): UInt = UInt(data.toInt() and 0xFFFF)
 /**
 * Converts this [UShort] value to [ULong].
 * The resulting `ULong` value represents the same numerical value as this `UShort`.
 * The least significant 16 bits of the resulting `ULong` value are the same as the bits of this `UShort` value,
 * whereas the most significant 48 bits are filled with zeros.
 @kotlin.internal.InlineOnly
 public inline fun toULong(): ULong = ULong(data.toLong() and 0xFFFF)
 /**
 * Converts this [UShort] value to [Float].
 * The resulting `Float` value represents the same numerical value as this `UShort`.
 @kotlin.internal.InlineOnly
 public inline fun toFloat(): Float = this.toInt().toFloat()
 /**
 * Converts this [UShort] value to [Double].
 * The resulting `Double` value represents the same numerical value as this `UShort`.
 @kotlin.internal.InlineOnly
 public inline fun toDouble(): Double = this.toInt().toDouble()
 public override fun toString(): String = toInt().toString()
 /**
 * Converts this [Byte] value to [UShort].
 * If this value is positive,
 the resulting `UShort` value represents the same numerical value as this `Byte`.
 * The least significant 8 bits of the resulting `UShort` value are the same as the bits of this `Byte` value,
 * whereas the most significant 8 bits are filled with the sign bit of this value.
 @SinceKotlin("1.5")
 @WasExperimental(ExperimentalUnsignedTypes::class)
 @kotlin.internal.InlineOnly
 public inline fun Byte.toUShort(): UShort = UShort(this.toShort())
 /**
 * Converts this [Short] value to [UShort].
 * If this value is positive, the resulting `UShort` value represents the same numerical value as this `Short`.
 * The resulting `UShort` value has the same binary representation as this `Short` value.
 @SinceKotlin("1.5")
 @WasExperimental(ExperimentalUnsignedTypes::class)
 @kotlin.internal.InlineOnly
 public inline fun Short.toUShort(): UShort = UShort(this)
 /**
 * Converts this [Int] value to [UShort].
 * If this value is positive and less than or equals to [UShort.MAX_VALUE],
 the resulting `UShort` value represents
 * the same numerical value as this `Int`.
 * The resulting `UShort` value is represented by the least significant 16 bits of this `Int` value.
 @SinceKotlin("1.5")
 @WasExperimental(ExperimentalUnsignedTypes::class)
 @kotlin.internal.InlineOnly
 public inline fun Int.toUShort(): UShort = UShort(this.toShort())
 /**
 * Converts this [Long] value to [UShort].
 * If this value is positive and less than or equals to [UShort.MAX_VALUE], the resulting `UShort` value represents
 * the same numerical value as this `Long`.
 * The resulting `UShort` value is represented by the least significant 16 bits of this `Long` value.
 @SinceKotlin("1.5")
 @WasExperimental(ExperimentalUnsignedTypes::class)
 @kotlin.internal.InlineOnly
 public inline fun Long.toUShort(): UShort = UShort(this.toShort())
 """
 /** Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source

```

```

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\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName(\"CollectionsKt\")\n@file:OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n\npackage kotlin.collections\n\nimport kotlin.contracts.\nimport kotlin.random.Random\n\ninternal object EmptyIterator : ListIterator<Nothing> {\n override fun hasNext(): Boolean = false\n override fun hasPrevious(): Boolean = false\n override fun nextIndex(): Int = 0\n override fun previousIndex(): Int = -1\n override fun next(): Nothing = throw NoSuchElementException()\n override fun previous(): Nothing = throw NoSuchElementException()\n}\n\ninternal object EmptyList : List<Nothing>, Serializable, RandomAccess {\n private const val serialVersionUID: Long = -7390468764508069838L\n\n override fun equals(other: Any?): Boolean = other is List<*> && other.isEmpty()\n override fun hashCode(): Int = 1\n override fun toString(): String = \"[]\"\n\n override val size: Int get() = 0\n override fun isEmpty(): Boolean = true\n override fun contains(element: Nothing): Boolean = false\n override fun containsAll(elements: Collection<Nothing>): Boolean = elements.isEmpty()\n\n override fun get(index: Int): Nothing = throw IndexOutOfBoundsException(\"Empty list doesn't contain element at index $index.\")\n override fun indexOf(element: Nothing): Int = -1\n override fun lastIndexOf(element: Nothing): Int = -1\n\n override fun iterator(): Iterator<Nothing> = EmptyIterator\n override fun listIterator(): ListIterator<Nothing> = EmptyIterator\n\n override fun listIterator(index: Int): ListIterator<Nothing> {\n if (index != 0) throw IndexOutOfBoundsException(\"Index: $index\")\n return EmptyIterator\n }\n\n override fun subList(fromIndex: Int, toIndex: Int): List<Nothing> {\n if (fromIndex == 0 && toIndex == 0) return this\n throw IndexOutOfBoundsException(\"fromIndex: $fromIndex, toIndex: $toIndex\")\n }\n\n private fun readResolve(): Any = EmptyList\n}\n\ninternal fun <T> Array<out T>.asCollection(): Collection<T> = ArrayAsCollection(this, isVarargs = false)\n\nprivate class ArrayAsCollection<T>(val values: Array<out T>, val isVarargs: Boolean) : Collection<T> {\n override val size: Int get() = values.size\n override fun isEmpty(): Boolean = values.isEmpty()\n override fun contains(element: T): Boolean = values.contains(element)\n override fun containsAll(elements: Collection<T>): Boolean = elements.all { contains(it) }\n override fun iterator(): Iterator<T> = values.iterator()\n // override hidden toArray implementation to prevent copying of values array\n public fun toArray(): Array<out Any?> = values.copyToArrayOfAny(isVarargs)\n}\n\n/**\n * Returns an empty read-only list. The returned list is serializable (JVM).\n *\n * @sample samples.collections.Collections.Lists.emptyReadOnlyList\n */\npublic fun <T> emptyList(): List<T> = EmptyList\n\n/**\n * Returns a new read-only list of given elements. The returned list is serializable (JVM).\n *\n * @sample samples.collections.Collections.Lists.readOnlyList\n */\npublic fun <T> listOf(vararg elements: T): List<T> = if (elements.size > 0) elements.asList() else emptyList()\n\n/**\n * Returns an empty read-only list. The returned list is serializable (JVM).\n *\n * @sample samples.collections.Collections.Lists.emptyReadOnlyList\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> listOf(): List<T> = emptyList()\n\n/**\n * Returns an empty new [MutableList].\n *\n * @sample samples.collections.Collections.Lists.emptyMutableList\n */\n@SinceKotlin(\"1.1\")\n@kotlin.internal.InlineOnly\npublic inline fun <T> mutableListOf(): MutableList<T> = ArrayList()\n\n/**\n * Returns an empty new [ArrayList].\n *\n * @sample samples.collections.Collections.Lists.emptyArrayList\n */\n@SinceKotlin(\"1.1\")\n@kotlin.internal.InlineOnly\npublic inline fun <T> arrayListOf(): ArrayList<T> = ArrayList<T>()\n\n/**\n * Returns a new [MutableList] with the given elements.\n *\n * @sample samples.collections.Collections.Lists.mutableList\n */\npublic fun <T> mutableListOf(vararg elements: T): MutableList<T> =\n if (elements.size == 0) ArrayList() else ArrayList(ArrayAsCollection(elements, isVarargs = true))\n\n/**\n * Returns a new [ArrayList] with the given elements.\n *\n * @sample samples.collections.Collections.Lists.arrayList\n */\npublic fun <T> arrayListOf(vararg elements: T): ArrayList<T> =\n if (elements.size == 0) ArrayList() else ArrayList(ArrayAsCollection(elements, isVarargs = true))\n\n/**\n * Returns a new read-only list either of single given element, if it is not null, or empty list if the element is null. The returned list is serializable (JVM).\n *\n * @sample samples.collections.Collections.Lists.listOfNotNull\n */\npublic fun

```

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<T : Any> listOfNotNull(element: T?): List<T> = if (element != null) listOf(element) else emptyList()\n\n/**\n *
Returns
a new read-only list only of those given elements, that are not null. The returned list is serializable (JVM).\n *
@sample samples.collections.Collections.Lists.listOfNotNull\n */\npublic fun <T : Any> listOfNotNull(vararg
elements: T?): List<T> = elements.filterNotNull()\n\n/**\n * Creates a new read-only list with the specified [size],
where each element is calculated by calling the specified\n * [init] function.\n * The function [init] is called for
each list element sequentially starting from the first one.\n * It should return the value for a list element given its
index.\n * \n * @sample samples.collections.Collections.Lists.readOnlyListFromInitializer\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> List(size: Int, init: (index: Int) -> T):
List<T> = MutableList(size, init)\n\n/**\n * Creates a new mutable list with the specified [size], where each element
is calculated by calling the specified\n * [init] function.\n * The function [init]
is called for each list element sequentially starting from the first one.\n * It should return the value for a list element
given its index.\n * \n * @sample samples.collections.Collections.Lists.mutableListFromInitializer\n
*/\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun <T> MutableList(size: Int, init: (index:
Int) -> T): MutableList<T> {\n val list = ArrayList<T>(size)\n repeat(size) { index -> list.add(init(index)) }\n
return list\n}\n\n/**\n * Builds a new read-only [List] by populating a [MutableList] using the given
[builderAction]\n * and returning a read-only list with the same elements.\n * The list passed as a receiver to the
[builderAction] is valid only inside that function.\n * Using it outside of the function produces an unspecified
behavior.\n * The returned list is serializable (JVM).\n * \n * @sample
samples.collections.Builders.Lists.buildListSample\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\npublic
inline fun <E> buildList(@BuilderInference builderAction: MutableList<E>().() -> Unit): List<E> {\n contract {
callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return
buildListInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninter
nal expect inline fun <E> buildListInternal(builderAction: MutableList<E>().() -> Unit): List<E>\n\n/**\n * Builds a
new read-only [List] by populating a [MutableList] using the given [builderAction]\n * and returning a read-only list
with the same elements.\n * The list passed as a receiver to the [builderAction] is valid only inside that
function.\n * Using it outside of the function produces an unspecified behavior.\n * The returned list is
serializable (JVM).\n * [capacity] is used to hint the expected number of elements added in the
[builderAction].\n * @throws IllegalArgumentException if the given [capacity] is negative.\n
*\n * @sample samples.collections.Builders.Lists.buildListSampleWithCapacity\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\npublic inline fun <E> buildList(capacity: Int, @BuilderInference builderAction:
MutableList<E>().() -> Unit): List<E> {\n contract { callsInPlace(builderAction,
InvocationKind.EXACTLY_ONCE) }\n return buildListInternal(capacity,
builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline
fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>().() -> Unit): List<E>\n\n/**\n * Returns an
[IntRange] of the valid indices for this collection.\n * \n * @sample
samples.collections.Collections.Collections.indicesOfCollection\n */\npublic val Collection<*>.indices: IntRange\n
get() = 0..size - 1\n\n/**\n * Returns the index of the last item in the list or -1 if the list is empty.\n * \n * @sample
samples.collections.Collections.Lists.lastIndexOfList\n
*/\npublic val <T> List<T>.lastIndex: Int\n get() = this.size - 1\n\n/**\n * Returns `true` if the collection is not
empty.\n * \n * @sample samples.collections.Collections.Collections.collectionIsNotEmpty\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>.isNotEmpty(): Boolean =
!isEmpty()\n\n/**\n * Returns `true` if this nullable collection is either null or empty.\n * \n * @sample
samples.collections.Collections.Collections.collectionIsNullOrEmpty\n
*/\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Collection<T>?.isNullOrEmpty():

```

```

Boolean {
 contract {
 returns(false) implies (this@isNullOrEmpty != null)
 }
 return this == null ||
 this.isEmpty()
}

/**
 * Returns this Collection if it's not `null` and the empty list otherwise.
 * @sample
 * samples.collections.Collections.Collections.collectionOrNull
 */
@kotlin.internal.InlineOnly
public inline fun
<T> Collection<T>?.orEmpty():
 Collection<T> = this ?: emptyList()

/**
 * Returns this List if it's not `null` and the empty list otherwise.
 * @sample
 * samples.collections.Collections.Lists.listOrNull
 */
@kotlin.internal.InlineOnly
public inline fun
<T> List<T>?.orEmpty(): List<T> = this ?: emptyList()

/**
 * Returns this collection if it's not empty or the
 * result of calling [defaultValue] function if the collection is empty.
 * @sample
 * samples.collections.Collections.Collections.collectionIfEmpty
 */
@SinceKotlin("1.3")
@kotlin.internal.InlineOnly
public inline fun <C, R> C.ifEmpty(defaultValue: () ->
R): R where C : Collection<*>, C : R =
 if (isEmpty()) defaultValue() else this

/**
 * Checks if all
 * elements in the specified collection are contained in this collection.
 * @sample
 * samples.collections.Collections.Collections.collectionContainsAll
 */
@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases
@kotlin.internal.InlineOnly
public inline fun <@kotlin.internal.OnlyInputTypes T>
Collection<T>.containsAll(elements: Collection<T>): Boolean =
 this.containsAll(elements)

/**
 * Returns a
 * new list with the elements of this list randomly shuffled
 * using the specified [random] instance as the source of
 * randomness.
 * @sample
 * samples.collections.Collections.Collections.collectionShuffled
 */
@SinceKotlin("1.3")
public fun <T> Iterable<T>.shuffled(random: Random): List<T> =
 toMutableList().apply { shuffle(random) }

/**
 * internal fun <T> List<T>.optimizeReadOnlyList() = when (size) {
 * 0 -> emptyList()
 * 1 -> listOf(this[0])
 * else -> this
 * }

/**
 * Searches this list or its range for the provided
 * [element] using the binary search algorithm.
 * The list is expected to be sorted into ascending order according to
 * the Comparable natural ordering of its elements,
 * otherwise the result is undefined.
 * If the list contains
 * multiple
 * elements equal to the specified [element], there is no guarantee which one will be found.
 * `null` value is
 * considered to be less than any non-null value.
 * @return the index of the element, if it is contained in the list
 * within the specified range;
 * otherwise, the inverted insertion point `-(insertion point - 1)`.
 * The insertion point
 * is defined as the index at which the element should be inserted,
 * so that the list (or the specified subrange of list)
 * still remains sorted.
 * @sample
 * samples.collections.Collections.Lists.binarySearchOnComparable
 * @sample
 * samples.collections.Collections.Lists.binarySearchWithBoundaries
 */
@kotlin.internal.InlineOnly
public fun <T : Comparable<T>>
List<T>?.binarySearch(element: T?, fromIndex: Int = 0, toIndex: Int = size): Int {
 rangeCheck(size, fromIndex,
toIndex)
 var low = fromIndex
 var high = toIndex - 1
 while (low <= high) {
 val mid = (low +
high).ushr(1) // safe from overflows
 val midVal = get(mid)
 val cmp = compareValues(midVal, element)
 if (cmp < 0)
 low = mid + 1
 else if (cmp >
0)
 high = mid - 1
 else
 return mid // key found
 }
 return -(low + 1) // key not
found
}

/**
 * Searches this list or its range for the provided [element] using the binary search algorithm.
 * The list is expected to be sorted into ascending order according to the specified [comparator],
 * otherwise the
 * result is undefined.
 * If the list contains
 * multiple elements equal to the specified [element], there is no
 * guarantee which one will be found.
 * `null` value is considered to be less than any non-null value.
 * @return the index of the element, if it is contained in the list within the specified range;
 * otherwise, the inverted
 * insertion point `-(insertion point - 1)`.
 * The insertion point is defined as the index at which the element should be
 * inserted,
 * so that the list (or the specified
 * subrange of list) still remains sorted according to the specified [comparator].
 * @sample
 * samples.collections.Collections.Lists.binarySearchWithComparator
 */
@kotlin.internal.InlineOnly
public fun <T>
List<T>.binarySearch(element: T, comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size): Int {
 rangeCheck(size, fromIndex, toIndex)
 var low = fromIndex
 var high = toIndex - 1
 while (low <=
high) {
 val mid = (low + high).ushr(1) // safe from overflows
 val midVal = get(mid)
 val cmp =
comparator.compare(midVal, element)
 if (cmp < 0)
 low = mid + 1
 else if (cmp > 0)
 high = mid - 1
 else
 return mid // key found
 }
 return -(low + 1) // key not
found
}

```

```

high = mid - 1\n else\n return mid // key found\n }\n return -(low + 1) // key not found\n}\n\n/**\n * Searches this list or its range for an element having the key returned by the specified [selector] function\n * equal to the provided [key] value using the binary search algorithm.\n * The list is expected to be sorted\n * into ascending order according to the Comparable natural ordering of keys of its elements.\n * otherwise the result is undefined.\n *\n * If the list contains multiple elements with the specified [key], there is no guarantee which one\n * will be found.\n *\n * `null` value is considered to be less than any non-null value.\n *\n * @return the index of the element with the specified [key], if it is contained in the list within the specified range;\n * otherwise, the inverted insertion point `-(insertion point - 1)`.\n * The insertion point is defined as the index at which the element should be\n * inserted,\n * so that the list (or the specified subrange of list) still remains sorted.\n *\n * @sample\n * samples.collections.Collections.Lists.binarySearchByKey\n */\npublic inline fun <T, K : Comparable<K>>\nList<T>.binarySearchBy(\n key: K?,\n fromIndex: Int = 0,\n toIndex: Int = size,\n crossinline selector: (T) -> K?)\n): Int =\n binarySearch(fromIndex, toIndex) { compareValues(selector(it),\n key) }\n\n// do not introduce this overload --- too rare\npublic fun <T, K> List<T>.binarySearchBy(key: K,\n comparator: Comparator<K>, fromIndex: Int = 0, toIndex: Int = size(), selector: (T) -> K): Int =\n binarySearch(fromIndex, toIndex) { comparator.compare(selector(it), key) }\n\n/**\n * Searches this list or its range for an element for which the given [comparison] function returns zero using the binary search algorithm.\n * The list is expected to be sorted so that the signs of the [comparison] function's return values ascend on the list\n * elements,\n * i.e. negative values come before zero and zeroes come before positive values.\n * Otherwise, the result is undefined.\n *\n * If the list contains multiple elements for which [comparison] returns zero, there is no guarantee\n * which one will be found.\n *\n * @param comparison function that returns zero when called on the list element\n * being searched.\n * On the elements coming before the target element, the function\n * must return negative values;\n * on the elements coming after the target element, the function must return positive\n * values.\n *\n * @return the index of the found element, if it is contained in the list within the specified range;\n * otherwise, the inverted insertion point `-(insertion point - 1)`.\n * The insertion point is defined as the index at which\n * the element should be inserted,\n * so that the list (or the specified subrange of list) still remains sorted.\n *\n * @sample\n * samples.collections.Collections.Lists.binarySearchWithComparisonFunction\n */\npublic fun <T>\nList<T>.binarySearch(fromIndex: Int = 0, toIndex: Int = size, comparison: (T) -> Int): Int {\n rangeCheck(size,\n fromIndex, toIndex)\n var low = fromIndex\n var high = toIndex - 1\n while (low <= high) {\n val mid\n = (low + high).ushr(1) // safe from overflows\n val midVal = get(mid)\n val cmp = comparison(midVal)\n if (cmp < 0)\n low = mid + 1\n else if (cmp\n > 0)\n high = mid - 1\n else\n return mid // key found\n }\n return -(low + 1) // key not\n found\n}\n\n/**\n * Checks that `from` and `to` are in\n * the range of [0..size] and throws an appropriate exception,\n * if they aren't.\n *\n * @private\n * fun rangeCheck(size: Int, fromIndex: Int, toIndex: Int) {\n when {\n fromIndex >\n toIndex -> throw IllegalArgumentException("fromIndex ($fromIndex) is greater than toIndex ($toIndex).")\n fromIndex < 0 -> throw IndexOutOfBoundsException("fromIndex ($fromIndex) is less than zero.")\n toIndex\n > size -> throw IndexOutOfBoundsException("toIndex ($toIndex) is greater than size ($size).")\n }\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal expect fun checkIndexOverflow(index: Int):\nInt\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal expect fun checkCountOverflow(count: Int):\nInt\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun throwIndexOverflow() {\n throw\n ArithmeticException("Index\n overflow has happened.")\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun throwCountOverflow() {\n throw\n ArithmeticException("Count overflow has happened.")\n}\n\n"/**\n * Copyright 2010-2021 JetBrains s.r.o.\n * and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license\n * that can be found in the license/LICENSE.txt file.\n *\n * @file: kotlin.jvm.JvmMultifileClass\n * @file: kotlin.jvm.JvmName("MapsKt")\n * @file: OptIn(kotlin.experimental.\n ExperimentalTypeInference::class)\n * @package kotlin.collections\n * @import kotlin.contracts.*\n * @private\n * object\n EmptyMap : Map<Any?, Nothing>, Serializable {\n private const val serialVersionUID: Long =\n 8246714829545688274\n override fun equals(other: Any?): Boolean = other is Map<*, *> &&

```

```

other.isEmpty()\n override fun hashCode(): Int = 0\n override fun toString(): String = "{}"\n\n override val
size: Int get() = 0\n override fun isEmpty(): Boolean = true\n\n override
fun containsKey(key: Any?): Boolean = false\n override fun containsValue(value: Nothing): Boolean = false\n\n
override fun get(key: Any?): Nothing? = null\n override val entries: Set<Map.Entry<Any?, Nothing>> get() =
EmptySet\n\n override val keys: Set<Any?> get() = EmptySet\n\n override val values: Collection<Nothing> get() =
EmptyList\n\n private fun readResolve(): Any = EmptyMap\n}\n\n/**\n * Returns an empty read-only map of
specified type.\n * \n * The returned map is serializable (JVM).\n * @sample
samples.collections.Maps.Instantiation.emptyReadOnlyMap\n */\n\n public fun <K, V> emptyMap(): Map<K, V> =
@Suppress("UNCHECKED_CAST") (EmptyMap as Map<K, V>)\n\n /**\n * Returns a new read-only map with
the specified contents, given as a list of pairs\n * where the first value is the key and the second is the value.\n * \n * If multiple pairs have the same key, the resulting map will contain the value from the last of those pairs.\n * \n * Entries of the map are iterated in
the order they were specified.\n * \n * The returned map is serializable (JVM).\n * @sample
samples.collections.Maps.Instantiation.mapFromPairs\n */\n\n public fun <K, V> mapOf(vararg pairs: Pair<K, V>):
Map<K, V> =\n if (pairs.size > 0) pairs.toMap(LinkedHashMap(mapCapacity(pairs.size))) else
emptyMap()\n\n /**\n * Returns an empty read-only map.\n * \n * The returned map is serializable (JVM).\n *
@sample samples.collections.Maps.Instantiation.emptyReadOnlyMap\n */\n\n @kotlin.internal.InlineOnly\n public
inline fun <K, V> mapOf(): Map<K, V> = emptyMap()\n\n /**\n * Returns an empty new [MutableMap].\n * \n * The
returned map preserves the entry iteration order.\n * @sample
samples.collections.Maps.Instantiation.emptyMutableMap\n */\n\n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public inline fun <K, V> mutableMapOf():
MutableMap<K, V> = LinkedHashMap()\n\n /**\n * Returns a new [MutableMap] with the specified contents, given
as a list of pairs\n * where the first component is the key
and the second is the value.\n * \n * If multiple pairs have the same key, the resulting map will contain the value
from the last of those pairs.\n * \n * Entries of the map are iterated in the order they were specified.\n *
@sample
samples.collections.Maps.Instantiation.mutableMapFromPairs\n */\n\n @sample
samples.collections.Maps.Instantiation.emptyMutableMap\n */\n\n public fun <K, V> mutableMapOf(vararg pairs:
Pair<K, V>): MutableMap<K, V> =\n LinkedHashMap<K, V>(mapCapacity(pairs.size)).apply { putAll(pairs)
}\n\n /**\n * Returns an empty new [HashMap].\n * \n * @sample
samples.collections.Maps.Instantiation.emptyHashMap\n */\n\n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public
inline fun <K, V> hashMapOf(): HashMap<K, V> =
HashMap<K, V>()\n\n /**\n * Returns a new [HashMap] with the specified contents, given as a list of pairs\n *
where the first component is the key and the second is the value.\n * \n * @sample
samples.collections.Maps.Instantiation.hashMapFromPairs\n */\n\n public
fun <K, V> hashMapOf(vararg pairs: Pair<K, V>): HashMap<K, V> = HashMap<K,
V>(mapCapacity(pairs.size)).apply { putAll(pairs) }\n\n /**\n * Returns an empty new [LinkedHashMap].\n *
@sample samples.collections.Maps.Instantiation.emptyHashMap\n */\n\n @SinceKotlin("1.1")\n @kotlin.internal.InlineOnly\n public
inline fun <K, V> linkedMapOf():
LinkedHashMap<K, V> = LinkedHashMap<K, V>()\n\n /**\n * Returns a new [LinkedHashMap] with the specified
contents, given as a list of pairs\n * where the first component is the key and the second is the value.\n * \n * If
multiple pairs have the same key, the resulting map will contain the value from the last of those pairs.\n * \n *
Entries of the map are iterated in the order they were specified.\n * \n * @sample
samples.collections.Maps.Instantiation.linkedMapFromPairs\n */\n\n public fun <K, V> linkedMapOf(vararg pairs:
Pair<K, V>): LinkedHashMap<K, V> = pairs.toMap(LinkedHashMap(mapCapacity(pairs.size)))\n\n /**\n * Builds
a new read-only [Map] by populating a [MutableMap] using the given [builderAction]\n * and returning
a read-only map with the same key-value pairs.\n * \n * The map passed as a receiver to the [builderAction] is valid
only inside that function.\n * Using it outside of the function produces an unspecified behavior.\n * \n * Entries of
the map are iterated in the order they were added by the [builderAction].\n * \n * The returned map is serializable
(JVM).\n * \n * @sample samples.collections.Builders.Maps.buildMapSample\n */

```



```

\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Suppress("DEPRECATION")\npublic inline fun <K, V> buildMap(@BuilderInference builderAction: MutableMap<K, V>().->Unit): Map<K, V> {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return buildMapInternal(builderAction)\n}\n\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>().->Unit): Map<K, V>\n\n**\n * Builds a new read-only [Map] by populating a [MutableMap] using the given [builderAction] and returning a read-only map with the same key-value pairs.\n * The map passed as a receiver to the [builderAction] is valid only inside that function.\n * Using it outside of the function produces an unspecified behavior.\n * [capacity] is used to hint the expected number of pairs added in the [builderAction].\n * Entries of the map are iterated in the order they were added by the [builderAction].\n * The returned map is serializable (JVM).\n * @throws IllegalArgumentException if the given [capacity] is negative.\n * @sample samples.collections.Builders.Maps.buildMapSample\n
\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Suppress("DEPRECATION")\npublic inline fun <K, V> buildMap(capacity: Int, @BuilderInference builderAction: MutableMap<K, V>().->Unit): Map<K, V> {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return buildMapInternal(capacity, builderAction)\n}\n\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal expect inline fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>().->Unit): Map<K, V>\n\n**\n * Calculate the initial capacity of a map.\n *\n@PublishedApi\ninternal expect fun mapCapacity(expectedSize: Int): Int\n\n**\n * Returns `true` if this map is not empty.\n * @sample samples.collections.Maps.Usage.mapIsNotEmpty\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.isEmpty(): Boolean = !isNotEmpty()\n\n**\n * Returns `true` if this nullable map is either null or empty.\n * @sample samples.collections.Maps.Usage.mapIsNullOrEmpty\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>?.isNullOrEmpty(): Boolean {\n contract {\n returns(false) implies (this@isNullOrEmpty != null)\n }\n return this == null || isEmpty()\n}\n\n**\n * Returns the [Map] if its not `null`, or the empty [Map] otherwise.\n * @sample samples.collections.Maps.Usage.mapOrElse\n
*\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<K, V>?.orElse(): Map<K, V> = this ?: emptyMap()\n\n**\n * Returns this map if it's not empty\n * or the result of calling [defaultValue] function if the map is empty.\n * @sample samples.collections.Maps.Usage.mapIfEmpty\n
\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <M, R> M.ifEmpty(defaultValue: () -> R): R where M : Map<, *>, M : R =\n if (isEmpty())\n defaultValue()\n else this\n\n**\n * Checks if the map contains the given key.\n * This method allows to use the `x in map` syntax for checking whether an object is contained in the map.\n * @sample samples.collections.Maps.Usage.containsKey\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun <@kotlin.internal.OnlyInputTypes K, V> Map<out K, V>.contains(key: K): Boolean = containsKey(key)\n\n**\n * Returns the value corresponding to the given [key], or `null` if such a key is not present in the map.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <@kotlin.internal.OnlyInputTypes K, V> Map<out K, V>.get(key: K): V? =\n @Suppress("UNCHECKED_CAST") (this as Map<K, V>).get(key)\n\n**\n * Allows to use the index operator for storing values in a mutable map.\n *\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<K, V>.set(key: K, value: V): Unit {\n put(key, value)\n}\n\n**\n * Returns `true` if the map contains the specified [key].\n * Allows to overcome type-safety restriction of `containsKey` that requires to pass a key of type `K`.\n *\n@kotlin.internal.InlineOnly\npublic inline fun <@kotlin.internal.OnlyInputTypes K> Map<out K, *>.containsKey(key: K): Boolean =\n @Suppress("UNCHECKED_CAST") (this as Map<K, *>).containsKey(key)\n\n**\n * Returns `true` if the map

```

maps one or more keys to the specified [value].

Allows to overcome type-safety restriction of `containsValue` that requires to pass a value of type `V`.

```
@sample samples.collections.Maps.Usage.containsValue
```

```
*/\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in some cases
```

```
/\n@kotlin.internal.InlineOnly\npublic inline fun <K, @kotlin.internal.OnlyInputTypes V> Map<K, V>.containsValue(value: V): Boolean = this.containsValue(value)\n\n/\n * Removes the specified key and its corresponding value from this map.
```

```
*/\n * @return the previous value associated with the key, or `null` if the key was not present in the map.\n\n*/\n * Allows to overcome type-safety restriction of `remove` that requires to pass a key of type `K`.\n\n*/\n@kotlin.internal.InlineOnly\npublic inline fun <@kotlin.internal.OnlyInputTypes K, V> MutableMap<out K, V>.remove(key: K): V? =\n @Suppress("UNCHECKED_CAST") (this as MutableMap<K, V>).remove(key)\n\n*/\n * Returns the key component of the map entry.
```

```
*/\n * This method allows to use destructuring declarations when working with maps, for example:\n\n*/\n * ```\n * for ((key, value) in map) {\n * // do something with the key and the value\n * }\n\n*/\n * ```\n\n*/\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> Map.Entry<K, V>.component1(): K = key
```

```
*/\n * Returns the value component of the map entry.
```

```
*/\n * This method allows to use destructuring declarations when working with maps, for example:\n\n*/\n * ```\n * for ((key, value) in map) {\n * // do something with the key and the value\n * }\n\n*/\n * ```\n\n*/\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> Map.Entry<K, V>.component2(): V = value
```

```
*/\n * Converts entry to [Pair] with key being first component and value being second.
```

```
/\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map.Entry<K, V>.toPair(): Pair<K, V> = Pair(key, value)\n\n/\n * Returns the value for the given [key] if the value is present and not `null`. Otherwise, returns the result of
```

```
the [defaultValue] function.
```

```
/\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<K, V>.getOrElse(key: K, default: () -> V): V = get(key) ?: default()\n\n/\ninternal inline fun <K, V> Map<K, V>.getOrElseNullable(key: K, default: () -> V): V {\n val value = get(key)\n if (value == null && !containsKey(key)) {\n return default()\n } else {\n @Suppress("UNCHECKED_CAST")\n return value as V\n }\n}\n\n*/\n * Returns the value for the given [key] or throws an exception if there is no such key in the map.
```

```
*/\n * If the map was created by [withDefault], resorts to its `default` provider function instead of throwing an exception.\n\n*/\n * @throws NoSuchElementException when the map doesn't contain a value for the specified key and\n\n*/\n * no implicit default value was provided for that map.
```

```
/\n@kotlin.internal.InlineOnly\npublic fun <K, V> Map<K, V>.getValue(key: K): V = getOrImplicitDefault(key)\n\n/\n * Returns the value for the given [key] if the value is present and not `null`.
```

```
*/\n * Otherwise, calls the [defaultValue] function, puts its result into the map under the given key and returns the call result.\n\n*/\n * Note that the operation is not guaranteed to be atomic if the map is being modified concurrently.
```

```
/\n@sample samples.collections.Maps.Usage.getOrPut\n\n/\npublic inline fun <K, V> MutableMap<K, V>.getOrPut(key: K, default: () -> V): V {\n val value = get(key)\n return if (value == null) {\n val answer = default()\n put(key, answer)\n answer\n } else {\n value\n }\n}\n\n*/\n * Returns an [Iterator] over the entries in the [Map].
```

```
/\n@sample samples.collections.Maps.Usage.forOverEntries\n\n/\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> Map<out K, V>.iterator(): Iterator<Map.Entry<K, V>> = entries.iterator()\n\n*/\n * Returns a [MutableIterator] over the mutable entries in the [MutableMap].
```

```
/\n@kotlin.jvm.JvmName("mutableIterator")\n@kotlin.internal.InlineOnly\npublic inline operator fun <K, V> MutableMap<K, V>.iterator(): MutableIterator<MutableMap.MutableEntry<K, V>> = entries.iterator()\n\n/\n * Populates the given [destination] map with entries having the keys of this map and the values obtained\n\n*/\n * by applying the [transform] function to each entry in this [Map].\n\n*/\npublic inline fun <K, V, R, M : MutableMap<in K, in R>> Map<out K, V>.mapValuesTo(destination: M, transform: (Map.Entry<K, V>) -> R): M {\n return entries.associateByTo(destination, { it.key }, transform)\n}\n\n*/\n * Populates the given [destination] map with entries having the keys obtained\n\n*/\n * by applying the [transform] function to each entry in this [Map] and the values
```

```

of this map.\n * In case if any two entries are mapped to the equal keys, the value of the latter one will
overwrite\n * the value associated with the former one.\n */\npublic inline
fun <K, V, R, M : MutableMap<in R, in V>> Map<out K, V>.mapKeysTo(destination: M, transform:
(Map.Entry<K, V>) -> R): M {\n return entries.associateByTo(destination, transform, { it.value })\n}\n\n/**\n * Puts all the given [pairs] into this [MutableMap] with the first component in the pair being the key and the second
the value.\n */\npublic fun <K, V> MutableMap<in K, in V>.putAll(pairs: Array<out Pair<K, V>>): Unit {\n for
((key, value) in pairs) {\n put(key, value)\n }\n}\n\n/**\n * Puts all the elements of the given collection into
this [MutableMap] with the first component in the pair being the key and the second the value.\n */\npublic fun <K,
V> MutableMap<in K, in V>.putAll(pairs: Iterable<Pair<K, V>>): Unit {\n for ((key, value) in pairs) {\n
put(key, value)\n }\n}\n\n/**\n * Puts all the elements of the given sequence into this [MutableMap] with the first
component in the pair being the key and the second the value.\n */\npublic fun <K, V> MutableMap<in
K, in V>.putAll(pairs: Sequence<Pair<K, V>>): Unit {\n for ((key, value) in pairs) {\n put(key, value)\n
}\n}\n\n/**\n * Returns a new map with entries having the keys of this map and the values obtained by applying the
[transform]\n * function to each entry in this [Map].\n */\n * The returned map preserves the entry iteration order of
the original map.\n */\n * @sample samples.collections.Maps.Transformations.mapValues\n */\npublic inline fun
<K, V, R> Map<out K, V>.mapValues(transform: (Map.Entry<K, V>) -> R): Map<K, R> {\n return
mapValuesTo(LinkedHashMap<K, R>(mapCapacity(size)), transform) // .optimizeReadOnlyMap()\n}\n\n/**\n * Returns a new Map with entries having the keys obtained by applying the [transform] function to each entry in this\n
* [Map] and the values of this map.\n */\n * In case if any two entries are mapped to the equal keys, the value of the
latter one will overwrite\n * the value associated with the former one.\n */\n * The returned map
preserves the entry iteration order of the original map.\n */\n * @sample
samples.collections.Maps.Transformations.mapKeys\n */\npublic inline fun <K, V, R> Map<out K,
V>.mapKeys(transform: (Map.Entry<K, V>) -> R): Map<R, V> {\n return mapKeysTo(LinkedHashMap<R,
V>(mapCapacity(size)), transform) // .optimizeReadOnlyMap()\n}\n\n/**\n * Returns a map containing all key-
value pairs with keys matching the given [predicate].\n */\n * The returned map preserves the entry iteration order of
the original map.\n */\n * @sample samples.collections.Maps.Filtering.filterKeys\n */\npublic inline fun <K, V>
Map<out K, V>.filterKeys(predicate: (K) -> Boolean): Map<K, V> {\n val result = LinkedHashMap<K, V>()\n
for (entry in this) {\n if (predicate(entry.key)) {\n result.put(entry.key, entry.value)\n }\n }\n
return result\n}\n\n/**\n * Returns a map containing all key-value pairs with values matching the given
[predicate].\n */\n * The returned map preserves the entry
iteration order of the original map.\n */\n * @sample samples.collections.Maps.Filtering.filterValues\n */\npublic inline
fun <K, V> Map<out K, V>.filterValues(predicate: (V) -> Boolean): Map<K, V> {\n val result =
LinkedHashMap<K, V>()\n for (entry in this) {\n if (predicate(entry.value)) {\n result.put(entry.key,
entry.value)\n }\n }\n return result\n}\n\n/**\n * Appends all entries matching the given [predicate] into
the mutable map given as [destination] parameter.\n */\n * @return the destination map.\n */\n * @sample
samples.collections.Maps.Filtering.filterTo\n */\npublic inline fun <K, V, M : MutableMap<in K, in V>> Map<out
K, V>.filterTo(destination: M, predicate: (Map.Entry<K, V>) -> Boolean): M {\n for (element in this) {\n if
(predicate(element)) {\n destination.put(element.key, element.value)\n }\n }\n return
destination\n}\n\n/**\n * Returns a new map containing all key-value pairs matching the given [predicate].\n
*/\n * The returned map preserves the entry iteration order of the original map.\n */\n * @sample
samples.collections.Maps.Filtering.filter\n */\npublic inline fun <K, V> Map<out K, V>.filter(predicate:
(Map.Entry<K, V>) -> Boolean): Map<K, V> {\n return filterTo(LinkedHashMap<K, V>(),
predicate)\n}\n\n/**\n * Appends all entries not matching the given [predicate] into the given [destination].\n */\n *
@return the destination map.\n */\n * @sample samples.collections.Maps.Filtering.filterNotTo\n */\npublic inline fun
<K, V, M : MutableMap<in K, in V>> Map<out K, V>.filterNotTo(destination: M, predicate: (Map.Entry<K, V>) -
> Boolean): M {\n for (element in this) {\n if (!predicate(element)) {\n destination.put(element.key,
element.value)\n }\n }\n return destination\n}\n\n/**\n * Returns a new map containing all key-value pairs
not matching the given [predicate].\n */\n * The returned map preserves the entry iteration order of the original

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map.\n * @sample
samples.collections.Maps.Filtering.filterNot\n *\npublic inline fun <K, V> Map<out K, V>.filterNot(predicate:
(Map.Entry<K, V>) -> Boolean): Map<K, V> {\n return filterNotTo(LinkedHashMap<K, V>(),
predicate)\n}\n\n/**\n * Returns a new map containing all key-value pairs from the given collection of pairs.\n *\n * The returned map preserves the entry iteration order of the original collection.\n *\n * If any of two pairs would have the
same key the last one gets added to the map.\n *\npublic fun <K, V> Iterable<Pair<K, V>>.toMap(): Map<K, V>
{\n if (this is Collection) {\n return when (size) {\n 0 -> emptyMap()\n 1 -> mapOf(if (this is
List) this[0] else iterator().next())\n else -> toMap(LinkedHashMap<K, V>(mapCapacity(size)))\n }\n }\n return toMap(LinkedHashMap<K, V>()).optimizeReadOnlyMap()\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs from the given collection of pairs.\n *\npublic fun
<K, V, M : MutableMap<in K, in V>> Iterable<Pair<K, V>>.toMap(destination: M): M =\n destination.apply {
putAll(this@toMap) }\n}\n\n/**\n * Returns a new map containing all key-value pairs from the given array of pairs.\n
*\n * The returned map preserves the entry iteration order of the original array.\n *\n * If any of two pairs would have
the same key the last one gets added to the map.\n *\npublic fun <K, V> Array<out Pair<K, V>>.toMap(): Map<K,
V> = when (size) {\n 0 -> emptyMap()\n 1 -> mapOf(this[0])\n else -> toMap(LinkedHashMap<K,
V>(mapCapacity(size)))\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs
from the given array of pairs.\n *\npublic fun <K, V, M : MutableMap<in K, in V>> Array<out Pair<K,
V>>.toMap(destination: M): M =\n destination.apply { putAll(this@toMap) }\n}\n\n/**\n * Returns a new map
containing all key-value pairs from the given sequence of pairs.\n *\n * The returned map preserves the entry
iteration order of
the original sequence.\n *\n * If any of two pairs would have the same key the last one gets added to the map.\n
*\npublic fun <K, V> Sequence<Pair<K, V>>.toMap(): Map<K, V> = toMap(LinkedHashMap<K,
V>()).optimizeReadOnlyMap()\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs
from the given sequence of pairs.\n *\npublic fun <K, V, M : MutableMap<in K, in V>> Sequence<Pair<K,
V>>.toMap(destination: M): M =\n destination.apply { putAll(this@toMap) }\n}\n\n/**\n * Returns a new read-only
map containing all key-value pairs from the original map.\n *\n * The returned map preserves the entry iteration
order of the original map.\n *\n@SinceKotlin("1.1")\npublic fun <K, V> Map<out K, V>.toMap(): Map<K, V> =
when (size) {\n 0 -> emptyMap()\n 1 -> toSingletonMap()\n else -> toMutableMap()\n}\n\n/**\n * Returns a
new mutable map containing all key-value pairs from the original map.\n *\n * The returned map preserves the entry
iteration order of the original
map.\n *\n@SinceKotlin("1.1")\npublic fun <K, V> Map<out K, V>.toMutableMap(): MutableMap<K, V> =
LinkedHashMap(this)\n}\n\n/**\n * Populates and returns the [destination] mutable map with key-value pairs from the
given map.\n *\n@SinceKotlin("1.1")\npublic fun <K, V, M : MutableMap<in K, in V>> Map<out K,
V>.toMap(destination: M): M =\n destination.apply { putAll(this@toMap) }\n}\n\n/**\n * Creates a new read-only
map by replacing or adding an entry to this map from a given key-value [pair].\n *\n * The returned map preserves
the entry iteration order of the original map.\n *\n * The [pair] is iterated in the end if it has a unique key.\n
*\npublic operator fun <K, V> Map<out K, V>.plus(pair: Pair<K, V>): Map<K, V> =\n if (this.isEmpty()) mapOf(pair) else
LinkedHashMap(this).apply { put(pair.first, pair.second) }\n}\n\n/**\n * Creates a new read-only map by replacing or
adding entries to this map from a given collection of key-value [pairs].\n *\n * The returned map preserves the
entry iteration order of the original map.\n *\n * Those [pairs] with unique keys are iterated in the end in the order of
[pairs] collection.\n *\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Iterable<Pair<K, V>>): Map<K, V>
=\n if (this.isEmpty()) pairs.toMap() else LinkedHashMap(this).apply { putAll(pairs) }\n}\n\n/**\n * Creates a new
read-only map by replacing or adding entries to this map from a given array of key-value [pairs].\n *\n * The
returned map preserves the entry iteration order of the original map.\n *\n * Those [pairs] with unique keys are iterated
in the end in the order of [pairs] array.\n *\npublic operator fun <K, V> Map<out K, V>.plus(pairs: Array<out
Pair<K, V>>): Map<K, V> =\n if (this.isEmpty()) pairs.toMap() else LinkedHashMap(this).apply { putAll(pairs)
}\n}\n\n/**\n * Creates a new read-only map by replacing or adding entries to this map from a given sequence of key-
value [pairs].\n *\n * The returned map preserves the entry iteration order of the original

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map.
 * Those [pairs] with unique keys are iterated in the end in the order of [pairs] sequence.
 * public
operator fun <K, V> Map<out K, V>.plus(pairs: Sequence<Pair<K, V>>): Map<K, V> =
LinkedHashMap(this).apply { putAll(pairs) }.optimizeReadOnlyMap()
 * Creates a new read-only map by
replacing or adding entries to this map from another [map].
 * The returned map preserves the entry iteration
order of the original map.
 * Those entries of another [map] that are missing in this map are iterated in the end in
the order of that [map].
 * public
operator fun <K, V> Map<out K, V>.plus(map: Map<out K, V>): Map<K, V>
=
LinkedHashMap(this).apply { putAll(map) }
 * Appends or replaces the given [pair] in this mutable
map.
 * public
operator fun <K, V> MutableMap<in K, in
V>.plusAssign(pair: Pair<K, V>) {
 put(pair.first, pair.second)
}
 * Appends or replaces all pairs from
the given collection of
[pairs] in this mutable map.
 * public
operator fun <K, V> MutableMap<in
K, in V>.plusAssign(pairs: Iterable<Pair<K, V>>) {
 putAll(pairs)
}
 * Appends or replaces all pairs
from the given array of [pairs] in this mutable map.
 * public
operator fun <K, V> MutableMap<in K, in V>.plusAssign(pairs: Array<out Pair<K, V>>) {
 putAll(pairs)
}
 * Appends or replaces all pairs from the given sequence of [pairs] in this mutable map.
 * public
operator fun <K, V> MutableMap<in K, in V>.plusAssign(pairs:
Sequence<Pair<K, V>>) {
 putAll(pairs)
}
 * Appends or replaces all entries from the given [map] in
this mutable map.
 * public
operator fun <K, V> MutableMap<in K, in
V>.plusAssign(map: Map<K, V>) {
 putAll(map)
}
 * Returns a map containing all entries of the
original map except the entry
with the given [key].
 * The returned map preserves the entry iteration order of the original map.
 * SinceKotlin("1.1")
operator fun <K, V> Map<out K, V>.minus(key: K): Map<K, V> =
this.toMutableMap().apply { minusAssign(key) }.optimizeReadOnlyMap()
 * Returns a map containing all
entries of the original map except those entries
 * the keys of which are contained in the given [keys] collection.
 * The returned map preserves the entry iteration order of the original map.
 * SinceKotlin("1.1")
operator fun <K, V> Map<out K, V>.minus(keys: Iterable<K>): Map<K, V> =
this.toMutableMap().apply {
minusAssign(keys)
}
 * Returns a map containing all entries of the original map
except those entries
 * the keys of which are contained in the given [keys] array.
 * The returned map
preserves the entry iteration order of the original map.
 * SinceKotlin("1.1")
operator fun <K, V>
Map<out K, V>.minus(keys:
Array<out K>): Map<K, V> =
this.toMutableMap().apply { minusAssign(keys)
}
 * Returns a map containing all entries of the original map except those entries
 * the keys of which are contained in the given [keys] sequence.
 * The returned map preserves the entry
iteration order of the original map.
 * SinceKotlin("1.1")
operator fun <K, V> Map<out K,
V>.minus(keys: Sequence<K>): Map<K, V> =
this.toMutableMap().apply { minusAssign(keys)
}
 * Returns a map containing all entries of the original map
except those entries
 * the keys of which are contained in the given [keys] array.
 * The returned map
preserves the entry iteration order of the original map.
 * public
operator fun <K, V> MutableMap<K,
V>.minusAssign(key: K) {
 remove(key)
}
 * Removes all entries the keys of which are contained in
the given [keys] collection from this mutable map.
 * SinceKotlin("1.1")
operator fun <K, V> MutableMap<K,
V>.minusAssign(keys:
Iterable<K>) {
 this.keys.removeAll(keys)
}
 * Removes all entries the keys of which are contained in
the given [keys] array from this mutable map.
 * SinceKotlin("1.1")
operator fun <K, V> MutableMap<K, V>.minusAssign(keys: Array<out K>) {
this.keys.removeAll(keys)
}
 * Removes all entries from the keys of which are contained in the given
[keys] sequence from this mutable map.
 * SinceKotlin("1.1")
operator fun <K, V> MutableMap<K, V>.minusAssign(keys: Sequence<K>) {
this.keys.removeAll(keys)
}
 * do not expose for now
 @PublishedApi
internal fun <K, V> Map<K,

```

```

V>.optimizeReadOnlyMap() = when (size) {
 0 -> emptyMap()
 1 -> toSingletonMapOrSelf()
 else ->
this}
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this source code is governed by the Apache 2.0 license that can be found
in the license/LICENSE.txt file.

@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("SetsKt")
@file:OptIn(kotlin.experimental.ExperimentalTypeInference::class)
package kotlin.collections
nimport kotlin.contracts.*
ninternal object
EmptySet : Set<Nothing>, Serializable {
 private const val serialVersionUID: Long =
3406603774387020532
 override fun equals(other: Any?): Boolean = other is Set<*> && other.isEmpty()
n
 override fun hashCode(): Int = 0
 override fun toString(): String = ""
n
 override val size: Int get() = 0
n
 override fun isEmpty(): Boolean = true
n
 override fun contains(element: Nothing): Boolean = false
n
 override fun containsAll(elements: Collection<Nothing>): Boolean = elements.isEmpty()
n
 override fun iterator():
Iterator<Nothing> = EmptyIterator
n
 private fun readResolve(): Any = EmptySet
}
n/**
 * Returns an
empty read-only set. The returned set is serializable (JVM).
 * @sample
samples.collections.Collections.Sets.emptyReadOnlySet

 *
npublic fun <T> emptySet(): Set<T> = EmptySet
n/**
 * Returns a new read-only set with the given
elements.
 * Elements of the set are iterated in the order they were specified.
 * The returned set is serializable
(JVM).
 * @sample samples.collections.Collections.Sets.readOnlySet
 *
npublic fun <T> setOf(vararg elements:
T): Set<T> = if (elements.size > 0) elements.toSet() else emptySet()
n/**
 * Returns an empty read-only set. The
returned set is serializable (JVM).
 * @sample samples.collections.Collections.Sets.emptyReadOnlySet
 *
n@kotlin.internal.InlineOnly
npublic inline fun <T> setOf(): Set<T> = emptySet()
n/**
 * Returns an empty
new [MutableSet].
 *
n * The returned set preserves the element iteration order.
 * @sample
samples.collections.Collections.Sets.emptyMutableSet

 *
n@SinceKotlin("1.1")
n@kotlin.internal.InlineOnly
npublic inline fun <T> mutableSetOf(): MutableSet<T> =
LinkedHashSet()
n/**
 *
Returns a new [MutableSet] with the given elements.
 * Elements of the set are iterated in the order they were
specified.
 * @sample samples.collections.Collections.Sets.mutableSet
 *
npublic fun <T> mutableSetOf(vararg
elements: T): MutableSet<T> = elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))
n/**
Returns
an empty new [HashSet].
 *
n@SinceKotlin("1.1")
n@kotlin.internal.InlineOnly
npublic inline fun <T>
hashSetOf(): HashSet<T> = HashSet()
n/**
Returns a new [HashSet] with the given elements.
 *
npublic fun <T>
hashSetOf(vararg elements: T): HashSet<T> =
elements.toCollection(HashSet(mapCapacity(elements.size)))
n/**
Returns an empty new [LinkedHashSet].
 *
 * @sample samples.collections.Collections.Sets.emptyLinkedHashSet

 *
n@SinceKotlin("1.1")
n@kotlin.internal.InlineOnly
npublic inline fun <T> linkedSetOf(): LinkedHashSet<T>
= LinkedHashSet()
n/**
 * Returns a new [LinkedHashSet] with the given elements.
 * Elements of the set are
iterated
in the order they were specified.
 * @sample samples.collections.Collections.Sets.linkedHashSet
 *
npublic fun
<T> linkedSetOf(vararg elements: T): LinkedHashSet<T> =
elements.toCollection(LinkedHashSet(mapCapacity(elements.size)))
n/**
Returns a new read-only set either
with single given element, if it is not null, or empty set if the element is null.
 * The returned set is serializable
(JVM).
 * @sample samples.collections.Collections.Sets.setOfNotNull
 *
n@SinceKotlin("1.4")
npublic fun <T
: Any> setOfNotNull(element: T?): Set<T> = if (element != null) setOf(element) else emptySet()
n/**
Returns
a new read-only set only with those given elements, that are not null.
 * Elements of the set are iterated in the order
they were specified.
 * The returned set is serializable (JVM).
 * @sample
samples.collections.Collections.Sets.setOfNotNull
 *
n@SinceKotlin("1.4")
npublic fun <T : Any>
setOfNotNull(vararg elements: T?): Set<T> {
 return elements.filterNotNullTo(LinkedHashSet())
}
n/**
 * Builds a new read-only [Set] by populating a [MutableSet] using the given [builderAction]
 * and returning a
read-only set with the same elements.
 *
n * The set passed as a receiver to the [builderAction] is valid only inside
that function.
 * Using it outside of the function produces an unspecified behavior.
 *
n * Elements of the set are

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iterated in the order they were added by the [builderAction].\n *\n * The returned set is serializable (JVM).\n *\n *
@sample samples.collections.Builders.Sets.buildSetSample\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\npublic inline fun <E> buildSet(@BuilderInference builderAction: MutableSet<E>(). -
> Unit): Set<E> {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY_ONCE) }\n return
buildSetInternal(builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\nintern
al expect
inline fun <E> buildSetInternal(builderAction: MutableSet<E>(). -> Unit): Set<E>\n\n/**\n * Builds a new read-
only [Set] by populating a [MutableSet] using the given [builderAction]\n * and returning a read-only set with the
same elements.\n *\n * The set passed as a receiver to the [builderAction] is valid only inside that function.\n *
Using it outside of the function produces an unspecified behavior.\n *\n * [capacity] is used to hint the expected
number of elements added in the [builderAction].\n *\n * Elements of the set are iterated in the order they were
added by the [builderAction].\n *\n * The returned set is serializable (JVM).\n *\n * @throws
IllegalArgumentExpection if the given [capacity] is negative.\n *\n * @sample
samples.collections.Builders.Sets.buildSetSample\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\npublic inline fun <E> buildSet(capacity: Int, @BuilderInference builderAction:
MutableSet<E>(). -> Unit): Set<E> {\n contract { callsInPlace(builderAction,
InvocationKind.EXACTLY_ONCE) }\n return buildSetInternal(capacity,
builderAction)\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n\ninternal expect inline
fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>(). -> Unit): Set<E>\n\n\n/** Returns this Set
if it's not `null` and the empty set otherwise. */\n@kotlin.internal.InlineOnly\n\npublic inline fun <T>
Set<T>?.orEmpty(): Set<T> = this ?: emptySet()\n\n\ninternal fun <T> Set<T>.optimizeReadOnlySet() = when (size)
{\n 0 -> emptySet()\n 1 -> setOf(iterator().next())\n else -> this\n}\n\n"/*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin.ranges\n\n/**\n * A range of values of type `Char`.\n
*\n *\n */\n@OptIn(ExperimentalStdlibApi::class)\npublic class CharRange(start: Char, endInclusive: Char) :
CharProgression(start, endInclusive, 1), ClosedRange<Char>, OpenEndRange<Char> {\n override val start: Char
get() = first\n override val endInclusive: Char get() = last\n \n @Deprecated("Can throw an exception when
it's impossible to represent the value with Char type, for example, when the range includes MAX_VALUE. It's
recommended to use 'endInclusive' property that doesn't throw.")\n @SinceKotlin("1.7")\n @ExperimentalStdlibApi\n override val endExclusive: Char get() {\n if (last == Char.MAX_VALUE)
error("Cannot return the exclusive upper bound of a range that includes MAX_VALUE.")\n return last + 1\n
}\n\n override fun contains(value: Char): Boolean = first <= value && value <= last\n\n /**\n * Checks
whether the range is empty.\n *\n * The range is empty if its start value is greater than the end value.\n */\n override
fun isEmpty(): Boolean = first > last\n\n override fun equals(other: Any?): Boolean =\n other is CharRange
&& (isEmpty() && other.isEmpty() ||\n first == other.first && last == other.last)\n\n override fun hashCode():
Int =\n if (isEmpty()) -1 else (31 * first.code + last.code)\n\n override fun toString(): String =
"\$first..$last"\n\n companion object {\n /** An empty range of values of type Char. */\n public val
EMPTY: CharRange = CharRange(1.toChar(), 0.toChar())\n }\n}\n\n\n/**\n * A range of values of type `Int`.\n
*\n *\n */\n@OptIn(ExperimentalStdlibApi::class)\npublic class IntRange(start: Int, endInclusive: Int) :
IntProgression(start, endInclusive, 1), ClosedRange<Int>, OpenEndRange<Int> {\n override val start: Int get() =
first\n override val endInclusive: Int get() = last\n \n @Deprecated("Can throw an exception when it's
impossible to represent the value with Int type, for example, when the range includes MAX_VALUE.
It's recommended to use 'endInclusive' property that doesn't throw.")\n @SinceKotlin("1.7")\n @ExperimentalStdlibApi\n override val endExclusive: Int get() {\n if (last == Int.MAX_VALUE)

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error("Cannot return the exclusive upper bound of a range that includes MAX_VALUE.")\n return last + 1\n
}\n\n override fun contains(value: Int): Boolean = first <= value && value <= last\n\n /**\n * Checks whether the range is empty.\n *\n * The range is empty if its start value is greater than the end value.\n */\n\n override fun isEmpty(): Boolean = first > last\n\n override fun equals(other: Any?): Boolean =\n other is IntRange && (isEmpty() && other.isEmpty()) ||\n first == other.first && last == other.last\n\n override fun hashCode(): Int =\n if (isEmpty()) -1 else (31 * first + last)\n\n override fun toString(): String =\n "$first..$last"\n\n companion object {\n /** An empty range of values of type\n * Int.\n */\n public val EMPTY: IntRange = IntRange(1, 0)\n }\n\n /**\n * A range of values of type `Long`.\n */\n\n @OptIn(ExperimentalStdlibApi::class)\n public class LongRange(start: Long, endInclusive: Long) :

 LongProgression(start, endInclusive, 1), ClosedRange<Long>, OpenEndRange<Long> {\n override val start:

 Long get() = first\n override val endInclusive: Long get() = last\n @Deprecated("Can throw an exception when it's impossible to represent the value with Long type, for example, when the range includes MAX_VALUE. It's recommended to use 'endInclusive' property that doesn't throw.")\n @SinceKotlin("1.7")\n @ExperimentalStdlibApi\n override val endExclusive: Long get() {\n if (last == Long.MAX_VALUE)\n error("Cannot return the exclusive upper bound of a range that includes MAX_VALUE.")\n return last + 1\n }\n override fun contains(value: Long): Boolean = first <= value && value <= last\n /**\n * Checks whether the range is empty.\n *\n * The range is empty if its start value is greater than the end value.\n */\n override fun isEmpty(): Boolean = first > last\n override fun equals(other: Any?): Boolean =\n other is LongRange && (isEmpty() && other.isEmpty()) ||\n first == other.first && last == other.last\n override fun hashCode(): Int =\n if (isEmpty()) -1 else (31 * (first xor (first ushr 32)) + (last xor (last ushr 32))).toInt()\n override fun toString(): String = "$first..$last"\n companion object {\n /** An empty range of values of type Long.\n */\n public val EMPTY: LongRange = LongRange(1, 0)\n }\n }\n\n /**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n @file:kotlin.jvm.JvmMultifileClass\n @file:kotlin.jvm.JvmName("StringsKt")\n @file:Suppress("PLATFORM_CLASS_MAPPED_TO_KOTLIN")\n\n package kotlin.text\n\n /**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n */\n @SinceKotlin("1.1")\n public fun String.toByteArrayOrNull(): Byte? = toByteOrNull(radix = 10)\n\n /**\n * Parses the string as a signed [Byte] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n */\n @SinceKotlin("1.1")\n public fun String.toByteArrayOrNull(radix: Int): Byte? {\n val int = this.toIntOrNull(radix)?: return null\n if (int < Byte.MIN_VALUE || int > Byte.MAX_VALUE) return null\n return int.toByteArray()\n }\n\n /**\n * Parses the string as a [Short] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n */\n @SinceKotlin("1.1")\n public fun String.toShortOrNull(): Short? = toShortOrNull(radix = 10)\n\n /**\n * Parses the string as a [Short] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n */\n @SinceKotlin("1.1")\n public fun String.toShortOrNull(radix: Int): Short? {\n val int = this.toIntOrNull(radix)?: return null\n if (int < Short.MIN_VALUE || int > Short.MAX_VALUE) return null\n return int.toShort()\n }\n\n /**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n */\n @SinceKotlin("1.1")\n public fun String.toIntOrNull(): Int? = toIntOrNull(radix = 10)\n\n /**\n * Parses the string as an [Int] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n */\n @SinceKotlin("1.1")\n public fun String.toIntOrNull(radix: Int): Int? {\n checkRadix(radix)\n val length = this.length\n if (length == 0) return null\n val start: Int\n val isNegative: Boolean\n val limit: Int\n val firstChar = this[0]\n if (firstChar < '0') {\n // Possible leading sign\n if (length == 1) return null // non-digit (possible sign) only, no

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digits after\n\n start = 1\n\n if (firstChar == '-') {\n isNegative = true\n limit =
Int.MIN_VALUE\n } else if (firstChar == '+') {\n isNegative = false\n limit = -
Int.MAX_VALUE\n } else\n return null\n } else {\n start = 0\n isNegative = false\n limit
= -Int.MAX_VALUE\n }\n\n val limitForMaxRadix = (-Int.MAX_VALUE) / 36\n\n var limitBeforeMul =
limitForMaxRadix\n var result = 0\n for (i in start until length) {\n val digit = digitOf(this[i], radix)\n\n if (digit
< 0) return null\n if (result < limitBeforeMul) {\n if (limitBeforeMul == limitForMaxRadix) {\n
limitBeforeMul = limit / radix\n if (result < limitBeforeMul) {\n return null\n }\n } else {\n return null\n }\n }\n result *= radix\n if (result < limit + digit) return
null\n result -= digit\n }\n return if (isNegative) result else -result\n}\n\n/**\n * Parses the string as a
[Long] number and returns the result\n * or `null` if the string is not a valid representation of a number.\n
*/\n@SinceKotlin("1.1")\npublic fun String.toLongOrNull(): Long? = toLongOrNull(radix = 10)\n\n/**\n * Parses the
string as a [Long] number and returns the result\n * or `null` if the string is not a valid representation of a
number.\n * @throws IllegalArgumentException when [radix] is not a valid radix for string to number
conversion.\n */\n@SinceKotlin("1.1")\npublic
fun String.toLongOrNull(radix: Int): Long? {\n checkRadix(radix)\n\n val length = this.length\n if (length ==
0) return null\n\n val start: Int\n val isNegative: Boolean\n val limit: Long\n val firstChar = this[0]\n if
(firstChar < '0') { // Possible leading sign\n if (length == 1) return null // non-digit (possible sign) only, no
digits after\n\n start = 1\n\n if (firstChar == '-') {\n isNegative = true\n limit =
Long.MIN_VALUE\n } else if (firstChar == '+') {\n isNegative = false\n limit = -
Long.MAX_VALUE\n } else\n return null\n } else {\n start = 0\n isNegative = false\n
limit = -Long.MAX_VALUE\n }\n\n val limitForMaxRadix = (-Long.MAX_VALUE) / 36\n\n var
limitBeforeMul = limitForMaxRadix\n var result = 0L\n for (i in start until length) {\n val digit =
digitOf(this[i], radix)\n\n if
(digit < 0) return null\n if (result < limitBeforeMul) {\n if (limitBeforeMul == limitForMaxRadix) {\n
 limitBeforeMul = limit / radix\n if (result < limitBeforeMul) {\n return
null\n }\n } else {\n return null\n }\n }\n result *=
radix\n if (result < limit + digit)
return null\n result -= digit\n }\n return if (isNegative) result else -result\n}\n\ninternal fun
numberFormatError(input: String): Nothing = throw NumberFormatException("Invalid number format:
'$input')\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
/\n\npackage kotlin.time\nimport kotlin.contracts.\nimport kotlin.jvm.JvmInline\nimport kotlin.math.*\n\n/**\n *
Represents the amount of time
one instant of time is away from another instant.\n * A negative duration is possible in a situation when the
second instant is earlier than the first one.\n * The type can store duration values up to \u00b1146 years with
nanosecond precision,\n * and up to \u00b1146 million years with millisecond precision.\n * If a duration-returning
operation provided in `kotlin.time` produces a duration value that doesn't fit into the above range,\n * the returned
`Duration` is infinite.\n * An infinite duration value [Duration.INFINITE] can be used to represent infinite
timeouts.\n * To construct a duration use either the extension function [toDuration],\n * or the extension
properties [hours], [minutes], [seconds], and so on,\n * available on [Int], [Long], and [Double] numeric types.\n
* To get the value of this duration expressed in a particular [duration units][DurationUnit]\n * use the functions
[toInt], [toLong], and [toDouble]\n * or the properties [inWholeHours], [inWholeMinutes],
[inWholeSeconds], [inWholeNanoseconds], and so on.\n
*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\n@JvmInline\npublic value class
Duration internal constructor(private val rawValue: Long) : Comparable<Duration> {\n\n private val value: Long
get() = rawValue shr 1\n private inline val unitDiscriminator: Int get() = rawValue.toInt() and 1\n private fun
isInNanos() = unitDiscriminator == 0\n private fun isInMillis() = unitDiscriminator == 1\n private val
storageUnit get() = if (isInNanos()) DurationUnit.NANOSECONDS else DurationUnit.MILLISECONDS\n\n init

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{\n if (durationAssertionsEnabled) {\n if (isInNanos()) {\n if (value !in -
MAX_NANOS..MAX_NANOS) throw AssertionError("\$value ns is out of nanoseconds range")\n } else
{\n if (value !in -MAX_MILLIS..MAX_MILLIS) throw AssertionError("\$value ms is out of milliseconds
range")\n if (value in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS)
throw AssertionError("\$value ms is denormalized")\n }\n }\n}\n\n companion object {\n /**
The duration equal to exactly 0 seconds. */\n public val ZERO: Duration = Duration(0L)\n\n /** The
duration whose value is positive infinity. It is useful for representing timeouts that should never expire. */\n
public val INFINITE: Duration = durationOfMillis(MAX_MILLIS)\n internal val NEG_INFINITE: Duration =
durationOfMillis(-MAX_MILLIS)\n\n /** Converts the given time duration [value] expressed in the specified
[sourceUnit] into the specified [targetUnit]. */\n @ExperimentalTime\n public fun convert(value: Double,
sourceUnit: DurationUnit, targetUnit: DurationUnit): Double =\n convertDurationUnit(value, sourceUnit,
targetUnit)\n\n // Duration construction extension properties in Duration companion scope\n\n /** Returns a
[Duration] equal to this [Int] number of nanoseconds.
*/\n @kotlin.internal.InlineOnly\n public inline val Int.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n /** Returns a [Duration] equal to this [Long] number of
nanoseconds. */\n @kotlin.internal.InlineOnly\n public inline val Long.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n /**\n * Returns a [Duration] equal to this [Double]
number of nanoseconds.\n *\n * Depending on its magnitude, the value is rounded to an integer number of
nanoseconds or milliseconds.\n *\n * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n */\n @kotlin.internal.InlineOnly\n public inline val Double.nanoseconds get() =
toDuration(DurationUnit.NANOSECONDS)\n\n /** Returns a [Duration] equal to this [Int] number of
microseconds. */\n @kotlin.internal.InlineOnly\n public inline val Int.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n /** Returns a [Duration] equal to this [Long] number of
microseconds. */\n @kotlin.internal.InlineOnly\n public inline val Long.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n /**\n * Returns a [Duration] equal to this [Double] number of microseconds.\n *\n * Depending on its magnitude,
the value is rounded to an integer number of nanoseconds or milliseconds.\n *\n * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n */\n @kotlin.internal.InlineOnly\n public
inline val Double.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n /** Returns a
[Duration] equal to this [Int] number of milliseconds. */\n @kotlin.internal.InlineOnly\n public inline val
Int.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n /** Returns a [Duration] equal to this
[Long] number of milliseconds. */\n @kotlin.internal.InlineOnly\n public inline val Long.milliseconds
get() = toDuration(DurationUnit.MILLISECONDS)\n\n /**\n * Returns a [Duration] equal to this [Double] number of milliseconds.\n *\n * Depending on its magnitude,
the value is rounded to an integer number of nanoseconds or milliseconds.\n *\n * @throws
IllegalArgumentException if this [Double] value is `NaN`.\n */\n @kotlin.internal.InlineOnly\n public
inline val Double.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n /** Returns a
[Duration] equal to this [Int] number of seconds. */\n @kotlin.internal.InlineOnly\n public inline val
Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n /** Returns a [Duration] equal to this [Long]
number of seconds. */\n @kotlin.internal.InlineOnly\n public inline val Long.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n /**\n * Returns a [Duration] equal
to this [Double] number of seconds.\n *\n * Depending on its magnitude, the value is rounded to an
integer number of nanoseconds or milliseconds.\n *\n * @throws IllegalArgumentException if this
[Double] value is `NaN`.\n */\n @kotlin.internal.InlineOnly\n public inline val Double.seconds get() =
toDuration(DurationUnit.SECONDS)\n\n /** Returns a [Duration] equal to this [Int] number of minutes. */\n
 @kotlin.internal.InlineOnly\n public inline val Int.minutes get() = toDuration(DurationUnit.MINUTES)\n\n
 /** Returns a [Duration] equal to this [Long] number of minutes. */\n @kotlin.internal.InlineOnly\n
 public inline val Long.minutes get() = toDuration(DurationUnit.MINUTES)\n\n /**\n * Returns a

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[Duration] equal to this [Double] number of minutes.\n *\n * Depending on its magnitude, the value is
rounded to an integer number of nanoseconds or milliseconds.\n
 *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n */\n
@kotlin.internal.InlineOnly\n public inline val Double.minutes get() =
toDuration(DurationUnit.MINUTES)\n\n /** Returns a [Duration] equal to this [Int] number of hours. */\n
@kotlin.internal.InlineOnly\n public inline val Int.hours get() = toDuration(DurationUnit.HOURS)\n\n /**
Returns a [Duration] equal to this [Long] number of hours. */\n @kotlin.internal.InlineOnly\n public inline
val Long.hours get() = toDuration(DurationUnit.HOURS)\n\n /**\n * Returns a [Duration] equal to this
[Double] number of hours.\n *\n * Depending on its magnitude, the value is rounded to an integer number
of nanoseconds or milliseconds.\n *\n * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n */\n @kotlin.internal.InlineOnly\n public inline val Double.hours get()
= toDuration(DurationUnit.HOURS)\n\n /** Returns a [Duration] equal to this [Int] number of days. */\n
@kotlin.internal.InlineOnly\n public inline val Int.days get() = toDuration(DurationUnit.DAYS)\n\n /**
Returns a [Duration] equal to this [Long] number of days. */\n @kotlin.internal.InlineOnly\n public inline
val Long.days get() = toDuration(DurationUnit.DAYS)\n\n /**\n * Returns a [Duration] equal to this
[Double] number of days.\n *\n * Depending on its magnitude, the value is rounded to an integer number
of nanoseconds or milliseconds.\n *\n * @throws IllegalArgumentException if this [Double] value is
`NaN`.\n */\n @kotlin.internal.InlineOnly\n public inline val Double.days get() =
toDuration(DurationUnit.DAYS)\n\n // deprecated static factory functions\n /** Returns a [Duration]
representing the specified [value] number of nanoseconds. */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Int.nanoseconds' extension property from
Duration.Companion instead.", ReplaceWith("value.nanoseconds",
"kotlin.time.Duration.Companion.nanoseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")\n public fun nanoseconds(value: Int): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n /** Returns a [Duration] representing the specified
[value] number of nanoseconds. */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Long.nanoseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.nanoseconds", "kotlin.time.Duration.Companion.nanoseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun nanoseconds(value: Long):
Duration = value.toDuration(DurationUnit.NANOSECONDS)\n\n /**\n * Returns a [Duration]
representing the specified
[value] number of nanoseconds.\n *\n * @throws IllegalArgumentException if the provided `Double`
[value] is `NaN`.\n */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use
'Double.nanoseconds' extension property from Duration.Companion instead.", ReplaceWith("value.nanoseconds",
"kotlin.time.Duration.Companion.nanoseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")\n public fun nanoseconds(value: Double): Duration =
value.toDuration(DurationUnit.NANOSECONDS)\n\n /** Returns a [Duration] representing the specified
[value] number of microseconds. */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Int.microseconds' extension property from Duration.Companion instead.",
ReplaceWith("value.microseconds", "kotlin.time.Duration.Companion.microseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun microseconds(value: Int): Duration = value.toDuration(DurationUnit.MICROSECONDS)\n\n /**
Returns a [Duration] representing the specified [value] number of microseconds. */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Long.microseconds' extension property from
Duration.Companion instead.", ReplaceWith("value.microseconds",
"kotlin.time.Duration.Companion.microseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")\n public fun microseconds(value: Long): Duration =
value.toDuration(DurationUnit.MICROSECONDS)\n\n /**\n * Returns a [Duration] representing the

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specified [value] number of microseconds.\n *\n * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n *\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Double.microseconds' extension property from Duration.Companion instead."),
 ReplaceWith("value.microseconds", "kotlin.time.Duration.Companion.microseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun microseconds(value:
Double): Duration = value.toDuration(DurationUnit.MICROSECONDS)\n\n /** Returns a [Duration]
representing the specified [value] number of milliseconds. *\n @SinceKotlin("1.5")\n
@ExperimentalTime\n @Deprecated("Use 'Int.milliseconds' extension property from Duration.Companion
instead.", ReplaceWith("value.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun milliseconds(value: Int):
Duration = value.toDuration(DurationUnit.MILLISECONDS)\n\n /** Returns a [Duration] representing the
specified [value] number of milliseconds. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n
@Deprecated("Use 'Long.milliseconds' extension
property from Duration.Companion instead.", ReplaceWith("value.milliseconds",
"kotlin.time.Duration.Companion.milliseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.6",
errorSince = "1.8")\n public fun milliseconds(value: Long): Duration =
value.toDuration(DurationUnit.MILLISECONDS)\n\n /**\n * Returns a [Duration] representing the
specified [value] number of milliseconds.\n *\n * @throws IllegalArgumentException if the provided
`Double` [value] is `NaN`.\n *\n @SinceKotlin("1.5")\n @ExperimentalTime\n
@Deprecated("Use 'Double.milliseconds' extension property from Duration.Companion instead."),
 ReplaceWith("value.milliseconds", "kotlin.time.Duration.Companion.milliseconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun milliseconds(value:
Double): Duration = value.toDuration(DurationUnit.MILLISECONDS)\n\n /** Returns a [Duration]
representing the specified [value] number of seconds. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n
@Deprecated("Use 'Int.seconds' extension property from Duration.Companion instead.",
 ReplaceWith("value.seconds", "kotlin.time.Duration.Companion.seconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun seconds(value: Int):
Duration = value.toDuration(DurationUnit.SECONDS)\n\n /** Returns a [Duration] representing the specified
[value] number of seconds. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use
'Long.seconds' extension property from Duration.Companion instead.", ReplaceWith("value.seconds",
"kotlin.time.Duration.Companion.seconds"))\n @DeprecatedSinceKotlin(warningSince = "1.6", errorSince =
"1.8")\n public fun seconds(value: Long): Duration = value.toDuration(DurationUnit.SECONDS)\n\n
/**\n * Returns a [Duration]
representing the specified [value] number of seconds.\n *\n * @throws IllegalArgumentException if the
provided `Double` [value] is `NaN`.\n *\n @SinceKotlin("1.5")\n @ExperimentalTime\n
@Deprecated("Use 'Double.seconds' extension property from Duration.Companion instead."),
 ReplaceWith("value.seconds", "kotlin.time.Duration.Companion.seconds"))\n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun seconds(value: Double):
Duration = value.toDuration(DurationUnit.SECONDS)\n\n /** Returns a [Duration] representing the
specified [value] number of minutes. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n
@Deprecated("Use 'Int.minutes' extension property from Duration.Companion instead.",
 ReplaceWith("value.minutes", "kotlin.time.Duration.Companion.minutes"))\n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun minutes(value:
Int): Duration = value.toDuration(DurationUnit.MINUTES)\n\n /** Returns a [Duration] representing the
specified [value] number of minutes. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n
@Deprecated("Use 'Long.minutes' extension property from Duration.Companion instead.",
 ReplaceWith("value.minutes", "kotlin.time.Duration.Companion.minutes"))\n
@DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun minutes(value: Long):

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Duration = value.toDuration(DurationUnit.MINUTES)\n\n /**\n * Returns a [Duration] representing the
specified [value] number of minutes.\n *\n * @throws IllegalArgumentException if the provided `Double`
[value] is `NaN`.\n */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use
'Double.minutes' extension property from Duration.Companion instead.", ReplaceWith("value.minutes",
"kotlin.time.Duration.Companion.minutes"))\n
 @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun minutes(value:
Double): Duration = value.toDuration(DurationUnit.MINUTES)\n\n /** Returns a [Duration] representing the
specified [value] number of hours. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Int.hours' extension property from Duration.Companion instead.",
ReplaceWith("value.hours", "kotlin.time.Duration.Companion.hours"))\n
 @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun hours(value: Int): Duration
= value.toDuration(DurationUnit.HOURS)\n\n /** Returns a [Duration] representing the specified [value]
number of hours. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use
'Long.hours' extension property from Duration.Companion instead.", ReplaceWith("value.hours",
"kotlin.time.Duration.Companion.hours"))\n @DeprecatedSinceKotlin(warningSince
= "1.6", errorSince = "1.8")\n public fun hours(value: Long): Duration =
value.toDuration(DurationUnit.HOURS)\n\n /**\n * Returns a [Duration] representing the specified
[value] number of hours.\n *\n * @throws IllegalArgumentException if the provided `Double` [value] is
`NaN`.\n */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Double.hours'
extension property from Duration.Companion instead.", ReplaceWith("value.hours",
"kotlin.time.Duration.Companion.hours"))\n @DeprecatedSinceKotlin(warningSince = "1.6", errorSince =
"1.8")\n public fun hours(value: Double): Duration = value.toDuration(DurationUnit.HOURS)\n\n /**
Returns a [Duration] representing the specified [value] number of days. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Int.days' extension property from Duration.Companion instead.",
ReplaceWith("value.days",
"kotlin.time.Duration.Companion.days"))\n @DeprecatedSinceKotlin(warningSince = "1.6", errorSince =
"1.8")\n public fun days(value: Int): Duration = value.toDuration(DurationUnit.DAYS)\n\n /** Returns a
[Duration] representing the specified [value] number of days. *\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use 'Long.days' extension property from Duration.Companion
instead.", ReplaceWith("value.days", "kotlin.time.Duration.Companion.days"))\n
 @DeprecatedSinceKotlin(warningSince = "1.6", errorSince = "1.8")\n public fun days(value: Long):
Duration = value.toDuration(DurationUnit.DAYS)\n\n /**\n * Returns a [Duration] representing the
specified [value] number of days.\n *\n * @throws IllegalArgumentException if the provided `Double`
[value] is `NaN`.\n */\n @SinceKotlin("1.5")\n @ExperimentalTime\n @Deprecated("Use
'Double.days' extension property from Duration.Companion instead.", ReplaceWith("value.days",
"kotlin.time.Duration.Companion.days"))\n @DeprecatedSinceKotlin(warningSince = "1.6", errorSince =
"1.8")\n public fun days(value: Double): Duration = value.toDuration(DurationUnit.DAYS)\n\n /**\n * Parses a string that represents a duration and returns the parsed [Duration] value.\n *\n * The following
formats are accepted:\n *\n * - ISO-8601 Duration format, e.g. `P1DT2H3M4.058S`, see [toIsoString] and
[parseIsoString].\n * - The format of string returned by the default [Duration.toString] and `toString` in a
specific unit,\n * e.g. `10s`, `1h 30m` or `-(1h 30m)`.\n *\n * @throws IllegalArgumentException if
the string doesn't represent a duration in any of the supported formats.\n */\n @sample
samples.time.Durations.parse\n public fun parse(value: String): Duration
= try {\n parseDuration(value, strictIso = false)\n } catch (e: IllegalArgumentException) {\n
throw IllegalArgumentException("Invalid duration string format: '$value'.", e)\n }\n\n /**\n * Parses
a string that represents a duration in a restricted ISO-8601 composite representation\n * and returns the
parsed [Duration] value.\n * Composite representation is a relaxed version of ISO-8601 duration format that
supports\n * negative durations and negative values of individual components.\n *\n * The following

```

```

restrictions are imposed.\n
 * - The only allowed non-time designator is days (`D`), `Y` (years), `W` (weeks), and `M` (months) are not supported.\n
 * - Day is considered to be exactly 24 hours (24-hour clock time scale).\n
 * - Alternative week-based representation `[P][number][W]` is not supported.\n
 * @throws IllegalArgumentException
if the string doesn't represent a duration in ISO-8601 format.\n
 * @sample
samples.time.Durations.parseIsoString\n
 * public fun parseIsoString(value: String): Duration = try {\n
 parseDuration(value, strictIso = true)\n
 } catch (e: IllegalArgumentException) {\n
 throw
IllegalArgumentException("Invalid ISO duration string format: '$value'.", e)\n
 }\n
 /**\n
 * Parses a string that represents a duration and returns the parsed [Duration] value,\n
 * or `null` if the string doesn't represent a duration in any of the supported formats.\n
 * The following formats are accepted:\n
 * - Restricted ISO-8601 duration composite representation, e.g. `P1DT2H3M4.058S`, see [toIsoString] and [parseIsoString].\n
 * - The format of string returned by the default [Duration.toString] and `toString` in a specific unit,\n
 * e.g. `10s`, `1h 30m` or `-(1h 30m)`.\n
 * @sample samples.time.Durations.parse\n
 * public fun parseOrNull(value: String): Duration? = try {\n
 parseDuration(value, strictIso = false)\n
 } catch (e: IllegalArgumentException) {\n
 null\n
 }\n
 /**\n
 * Parses a string that represents a duration in restricted ISO-8601 composite representation\n
 * and returns the parsed [Duration] value or `null` if the string doesn't represent a duration in the format\n
 * acceptable by [parseIsoString].\n
 * @sample samples.time.Durations.parseIsoString\n
 * public fun parseIsoStringOrNull(value: String): Duration? = try {\n
 parseDuration(value, strictIso = true)\n
 } catch (e: IllegalArgumentException) {\n
 null\n
 }\n
 // arithmetic operators\n
 /** Returns the negative of this value. *\n
 public operator fun unaryMinus(): Duration = durationOf(-value, unitDiscriminator)\n
 /**\n
 * Returns a duration whose value is the sum of this and [other] duration values.\n
 * @throws IllegalArgumentException if the operation results in an undefined value for the given arguments,\n
 * e.g. when adding infinite durations of different sign.\n
 * public operator fun plus(other: Duration): Duration {\n
 when {\n
 this.isInfinite() -> {\n
 if (other.isFinite() || (this.rawValue xor other.rawValue >= 0))\n
 return this\n
 else\n
 throw IllegalArgumentException("Summing infinite durations of different signs yields an undefined result.")\n
 }\n
 other.isInfinite() -> return other\n
 }\n
 return when {\n
 this.unitDiscriminator == other.unitDiscriminator -> {\n
 val result = this.value + other.value // never overflows long, but can overflow long63\n
 when {\n
 isInNanos()\n
 ->\n
 durationOfNanosNormalized(result)\n
 else ->\n
 durationOfMillisNormalized(result)\n
 }\n
 }\n
 this.isInNanos()\n
 addValuesMixedRanges(this.value, other.value)\n
 else ->\n
 addValuesMixedRanges(other.value, this.value)\n
 }\n
 } private fun addValuesMixedRanges(thisMillis: Long, otherNanos: Long): Duration {\n
 val otherMillis = nanosToMillis(otherNanos)\n
 val resultMillis = thisMillis + otherMillis\n
 return if (resultMillis in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n
 val otherNanoRemainder = otherNanos - millisToNanos(otherMillis)\n
 durationOfNanos(millisToNanos(resultMillis) + otherNanoRemainder)\n
 } else {\n
 durationOfMillis(resultMillis.coerceIn(-MAX_MILLIS, MAX_MILLIS))\n
 }\n
 }\n
 /**\n
 * Returns a duration whose value is the difference between this and [other] duration values.\n
 * @throws IllegalArgumentException if the operation results in an undefined value for the given arguments,\n
 * e.g. when subtracting infinite durations of the same sign.\n
 * public operator fun minus(other: Duration): Duration = this + (-other)\n
 /**\n
 * Returns a duration whose value is this duration value multiplied by the given [scale] number.\n
 * @throws IllegalArgumentException if the operation results in an undefined value for the given arguments,\n
 * e.g. when multiplying an infinite duration by zero.\n
 * public operator fun times(scale: Int): Duration {\n
 if (isInfinite()) {\n
 return when {\n
 scale == 0 -> throw IllegalArgumentException("Multiplying infinite duration by zero yields an undefined result.")\n
 scale > 0 -> this\n
 else -> -this\n
 }\n
 }\n
 if (scale == 0)\n
 return ZERO\n
 }

```

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 val value = value\n val result = value * scale\n return if (isInNanos()) {\n if (value in
(MAX_NANOS / Int.MIN_VALUE)..(-MAX_NANOS / Int.MIN_VALUE)) {\n // can't overflow nanos
range for any scale\n durationOfNanos(result)\n } else {\n if (result / scale == value) {\n
durationOfNanosNormalized(result)\n } else {\n val millis = nanosToMillis(value)\n
val remNanos = value - millisToNanos(millis)\n val resultMillis = millis * scale\n
val totalMillis = resultMillis + nanosToMillis(remNanos * scale)\n if (resultMillis / scale == millis &&
totalMillis xor resultMillis >= 0) {\n durationOfMillis(totalMillis.coerceIn(-
MAX_MILLIS..MAX_MILLIS))\n } else {\n if (value.sign * scale.sign > 0) INFINITE
else NEG_INFINITY\n }\n }\n } else {\n if (result / scale == value) {\n
durationOfMillis(result.coerceIn(-MAX_MILLIS..MAX_MILLIS))\n } else {\n if (value.sign *
scale.sign > 0) INFINITE else NEG_INFINITY\n }\n }\n }\n\n /**\n * Returns a duration whose
value is this duration value multiplied by the given [scale] number.\n *\n * The operation may involve rounding
when the result cannot be represented exactly with a [Double] number.\n *\n * @throws
IllegalArgumentOutOfRangeException if the operation results in an undefined value for the given arguments,\n * e.g. when
multiplying an infinite duration by zero.\n */\n public operator fun times(scale: Double): Duration {\n val
intScale = scale.roundToInt()\n if (intScale.toDouble() == scale) {\n return times(intScale)\n }\n
val unit = storageUnit\n val result = toDouble(unit)\n * scale\n return result.toDuration(unit)\n }\n\n /**\n * Returns a duration whose value is this duration
value divided by the given [scale] number.\n *\n * @throws IllegalArgumentOutOfRangeException if the operation results
in an undefined value for the given arguments,\n * e.g. when dividing zero duration by zero.\n */\n public
operator fun div(scale: Int): Duration {\n if (scale == 0) {\n return when {\n isPositive() ->
INFINITE\n isNegative() -> NEG_INFINITY\n else -> throw
IllegalArgumentOutOfRangeException("Dividing zero duration by zero yields an undefined result.")\n }\n }\n if
(isInNanos()) {\n return durationOfNanos(value / scale)\n } else {\n if (isInfinite())\n return this * scale.sign\n val result = value / scale\n if (result in -
MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {\n val
rem = millisToNanos(value - (result * scale)) / scale\n return durationOfNanos(millisToNanos(result) +
rem)\n }\n return durationOfMillis(result)\n }\n }\n\n /**\n * Returns a duration whose
value is this duration value divided by the given [scale] number.\n *\n * @throws IllegalArgumentOutOfRangeException if
the operation results in an undefined value for the given arguments,\n * e.g. when dividing an infinite duration by
infinity or zero duration by zero.\n */\n public operator fun div(scale: Double): Duration {\n val intScale =
scale.roundToInt()\n if (intScale.toDouble() == scale && intScale != 0) {\n return div(intScale)\n }\n
val unit = storageUnit\n val result = toDouble(unit) / scale\n return result.toDuration(unit)\n }\n\n /** Returns a number that is the ratio of this and [other] duration values. *\n */\n public operator fun div(other:
Duration): Double\n {\n val coarserUnit = maxOf(this.storageUnit, other.storageUnit)\n return this.toDouble(coarserUnit) /
other.toDouble(coarserUnit)\n }\n\n /** Returns true, if the duration value is less than zero. *\n */\n public fun
isNegative(): Boolean = rawValue < 0\n\n /** Returns true, if the duration value is greater than zero. *\n */\n public fun
isPositive(): Boolean = rawValue > 0\n\n /** Returns true, if the duration value is infinite. *\n */\n public fun
isInfinite(): Boolean = rawValue == INFINITE.rawValue || rawValue == NEG_INFINITY.rawValue\n\n /** Returns true, if the duration value is finite. *\n */\n public fun isFinite(): Boolean = !isInfinite()\n\n /** Returns the
absolute value of this value. The returned value is always non-negative. *\n */\n public val absoluteValue: Duration\n get() = if (isNegative()) -this else this\n\n override fun compareTo(other: Duration): Int {\n val compareBits =
this.rawValue xor other.rawValue\n if (compareBits < 0 || compareBits.toInt() and 1 == 0) // different signs or same sign/same range\n return
this.rawValue.compareTo(other.rawValue)\n // same sign/different ranges\n val r = this.unitDiscriminator -
other.unitDiscriminator // compare ranges\n return if (isNegative()) -r else r\n }\n\n // splitting to

```

```

components\n\n /**\n * Splits this duration into days, hours, minutes, seconds, and nanoseconds and executes
the given [action] with these components.\n * The result of [action] is returned as the result of this function.\n
*\n * - `nanoseconds` represents the whole number of nanoseconds in this duration, and its absolute value is less
than 1_000_000_000;\n * - `seconds` represents the whole number of seconds in this duration, and its absolute
value is less than 60;\n * - `minutes` represents the whole number of minutes in this duration, and its absolute
value is less than 60;\n * - `hours` represents the whole number
of hours in this duration, and its absolute value is less than 24;\n * - `days` represents the whole number of days
in this duration.\n *\n * Infinite durations are represented as either [Long.MAX_VALUE] days, or
[Long.MIN_VALUE] days (depending on the sign of infinity),\n * and zeroes in the lower components.\n */\n
public inline fun <T> toComponents(action: (days: Long, hours: Int, minutes: Int, seconds: Int, nanoseconds: Int) -
> T): T {\n contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }\n return
action(inWholeDays, hoursComponent, minutesComponent, secondsComponent, nanosecondsComponent)\n }
/>\n\n /**\n * Splits this duration into hours, minutes, seconds, and nanoseconds and executes the given [action] with
these components.\n * The result of [action] is returned as the result of this function.\n *\n * - `nanoseconds`
represents the whole number of nanoseconds in this duration, and its absolute value is less
than 1_000_000_000;\n * - `seconds` represents the whole number of seconds in this duration, and its absolute
value is less than 60;\n * - `minutes` represents the whole number of minutes in this duration, and its absolute
value is less than 60;\n * - `hours` represents the whole number of hours in this duration.\n *\n * Infinite
durations are represented as either [Long.MAX_VALUE] hours, or [Long.MIN_VALUE] hours (depending on the
sign of infinity),\n * and zeroes in the lower components.\n */\n
public inline fun <T> toComponents(action: (hours: Long, minutes: Int, seconds: Int, nanoseconds: Int) -> T): T {\n contract { callsInPlace(action,
InvocationKind.EXACTLY_ONCE) }\n return action(inWholeHours, minutesComponent, secondsComponent,
nanosecondsComponent)\n }\n\n /**\n * Splits this duration into minutes, seconds, and nanoseconds and
executes the given [action] with these components.\n * The result of [action] is returned
as the result of this function.\n *\n * - `nanoseconds` represents the whole number of nanoseconds in this
duration, and its absolute value is less than 1_000_000_000;\n * - `seconds` represents the whole number of
seconds in this duration, and its absolute value is less than 60;\n * - `minutes` represents the whole number of
minutes in this duration.\n *\n * Infinite durations are represented as either [Long.MAX_VALUE] minutes, or
[Long.MIN_VALUE] minutes (depending on the sign of infinity),\n * and zeroes in the lower components.\n */\n
public inline fun <T> toComponents(action: (minutes: Long, seconds: Int, nanoseconds: Int) -> T): T {\n contract { callsInPlace(action, InvocationKind.EXACTLY_ONCE) }\n return action(inWholeMinutes,
secondsComponent, nanosecondsComponent)\n }\n\n /**\n * Splits this duration into seconds, and
nanoseconds and executes the given [action] with these components.\n * The result of [action]
is returned as the result of this function.\n *\n * - `nanoseconds` represents the whole number of nanoseconds
in this duration, and its absolute value is less than 1_000_000_000;\n * - `seconds` represents the whole number
of seconds in this duration.\n *\n * Infinite durations are represented as either [Long.MAX_VALUE] seconds,
or [Long.MIN_VALUE] seconds (depending on the sign of infinity),\n * and zero nanoseconds.\n */\n
public inline fun <T> toComponents(action: (seconds: Long, nanoseconds: Int) -> T): T {\n contract {
callsInPlace(action, InvocationKind.EXACTLY_ONCE) }\n return action(inWholeSeconds,
nanosecondsComponent)\n }\n\n @PublishedApi\n internal val hoursComponent: Int\n get() = if
(isInfinite()) 0 else (inWholeHours % 24).toInt()\n\n @PublishedApi\n internal val minutesComponent: Int\n
get() = if (isInfinite()) 0 else (inWholeMinutes % 60).toInt()\n\n @PublishedApi\n internal val
secondsComponent:
Int\n get() = if (isInfinite()) 0 else (inWholeSeconds % 60).toInt()\n\n @PublishedApi\n internal val
nanosecondsComponent: Int\n get() = when {\n isInfinite() -> 0\n isInMillis() ->
millisToNanos(value % 1_000).toInt()\n else -> (value % 1_000_000_000).toInt()\n }\n\n //
conversion to units\n\n /**\n * Returns the value of this duration expressed as a [Double] number of the
specified [unit].\n *\n * The operation may involve rounding when the result cannot be represented exactly with

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toDouble(NANOSECONDS) if a double value is required.",
ReplaceWith("toDouble(DurationUnit.NANOSECONDS)")\n @DeprecatedSinceKotlin(warningSince =
"1.5", errorSince = "1.8")\n public val inNanoseconds: Double get() =
toDouble(DurationUnit.NANOSECONDS)\n\n /**\n * The value of this duration expressed as a [Long]
number of days.\n *\n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n */\n public val inWholeDays: Long\n get() =
toLong(DurationUnit.DAYS)\n\n /**\n * The value of this duration expressed as a [Long] number of hours.\n
*\n * An infinite duration value
is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n */\n public val
inWholeHours: Long\n get() = toLong(DurationUnit.HOURS)\n\n /**\n * The value of this duration
expressed as a [Long] number of minutes.\n *\n * An infinite duration value is converted either to
[Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n */\n public val inWholeMinutes:
Long\n get() = toLong(DurationUnit.MINUTES)\n\n /**\n * The value of this duration expressed as a
[Long] number of seconds.\n *\n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n */\n public val inWholeSeconds: Long\n get() =
toLong(DurationUnit.SECONDS)\n\n /**\n * The value of this duration expressed as a [Long] number of
milliseconds.\n *\n * An infinite duration value is converted either to [Long.MAX_VALUE] or
[Long.MIN_VALUE] depending on its sign.\n
*/\n public val inWholeMilliseconds: Long\n get() {\n return if (isInMillis() && isFinite()) value
else toLong(DurationUnit.MILLISECONDS)\n }\n\n /**\n * The value of this duration expressed as a
[Long] number of microseconds.\n *\n * If the result doesn't fit in the range of [Long] type, it is coerced into
that range:\n * - [Long.MIN_VALUE] is returned if it's less than `Long.MIN_VALUE`,\n * -
[Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n *\n * An infinite duration value
is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on its sign.\n */\n public val
inWholeMicroseconds: Long\n get() = toLong(DurationUnit.MICROSECONDS)\n\n /**\n * The value of
this duration expressed as a [Long] number of nanoseconds.\n *\n * If the result doesn't fit in the range of
[Long] type, it is coerced into that range:\n * - [Long.MIN_VALUE] is returned if it's less than
`Long.MIN_VALUE`,\n * - [Long.MAX_VALUE] is returned if it's greater than `Long.MAX_VALUE`.\n *\n
* An infinite duration value is converted either to [Long.MAX_VALUE] or [Long.MIN_VALUE] depending on
its sign.\n */\n public val inWholeNanoseconds: Long\n get() {\n val value = value\n return
when {\n isInNanos() -> value\n value > Long.MAX_VALUE / NANOS_IN_MILLIS ->
Long.MAX_VALUE\n value < Long.MIN_VALUE / NANOS_IN_MILLIS -> Long.MIN_VALUE\n
else -> millisToNanos(value)\n }\n }\n\n // shortcuts\n\n /**\n * Returns the value of this
duration expressed as a [Long] number of nanoseconds.\n *\n * If the value doesn't fit in the range of [Long]
type, it is coerced into that range, see the conversion [Double.toLong] for details.\n *\n * The range of
durations that can be expressed as a `Long` number of nanoseconds is approximately \u00b1292
years.\n */\n @ExperimentalTime\n @Deprecated("Use inWholeNanoseconds property instead.",
ReplaceWith("this.inWholeNanoseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\n public fun toLongNanoseconds(): Long = inWholeNanoseconds\n\n /**\n * Returns the value of
this duration expressed as a [Long] number of milliseconds.\n *\n * The value is coerced to the range of [Long]
type, if it doesn't fit in that range, see the conversion [Double.toLong] for details.\n *\n * The range of
durations that can be expressed as a `Long` number of milliseconds is approximately \u00b1292 million years.\n
*/\n @ExperimentalTime\n @Deprecated("Use inWholeMilliseconds property instead.",
ReplaceWith("this.inWholeMilliseconds"))\n @DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\n public fun toLongMilliseconds(): Long = inWholeMilliseconds\n\n /**\n * Returns a string
representation of this
duration value\n * expressed as a combination of numeric components, each in its own unit.\n *\n * Each
component is a number followed by the unit abbreviated name: `d`, `h`, `m`, `s`:\n * `5h`, `1d 12h`, `1h 0m

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30.340s`.\n \* The last component, usually seconds, can be a number with a fractional part.\n \* If the duration is less than a second, it is represented as a single number` with one of sub-second units: `ms` (milliseconds), `us` (microseconds), or `ns` (nanoseconds):\n \* `140.884ms`, `500us`, `24ns`. \n \* A negative duration is prefixed with `-` sign and, if it consists of multiple components, surrounded with parentheses:\n \* `-12m` and `-(1h 30m)`. \n \* Special cases:\n \* - an infinite duration is formatted as `\"Infinity\"` or `\"-Infinity\"` without a unit.\n \* It's recommended to use [toIsoString] that uses more strict ISO-8601 format instead of this `toString` when you want to convert a duration to a string in cases of serialization, interchange, etc.\n \* @sample

```

samples.time.Durations.toStringDefault\n */\n override fun toString(): String = when (rawValue) {\n OL -> \"0s\"\n INFINITE.rawValue -> \"Infinity\"\n NEG_INFINITE.rawValue -> \"-Infinity\"\n else -> {\n val isNegative = isNegative()\n buildString {\n if (isNegative) append('-')\n absoluteValue.toComponents { days, hours, minutes, seconds, nanoseconds ->\n val hasDays = days != 0L\n val hasHours = hours != 0L\n val hasMinutes = minutes != 0L\n val hasSeconds = seconds != 0 || nanoseconds != 0L\n var components = 0\n if (hasDays) {\n append(days).append('d')\n components++\n }\n if (hasHours ||\n (hasDays && (hasMinutes\n || hasSeconds))) {\n if (components++ > 0) append(' ')\n append(hours).append('h')\n }\n if (hasMinutes || (hasSeconds && (hasHours || hasDays))) {\n if (components++ > 0) append(' ')\n append(minutes).append('m')\n }\n if (hasSeconds) {\n if (components++ > 0) append(' ')\n when {\n seconds != 0 || hasDays || hasHours || hasMinutes ->\n appendFractional(seconds, nanoseconds, 9,\n \"s\", isoZeroes = false)\n nanoseconds >= 1_000_000 ->\n appendFractional(nanoseconds / 1_000_000, nanoseconds % 1_000_000, 6, \"ms\", isoZeroes = false)\n nanoseconds >= 1_000 ->\n appendFractional(nanoseconds / 1_000, nanoseconds % 1_000, 3, \"us\", isoZeroes = false)\n else ->\n append(nanoseconds).append(\"ns\")\n }\n }\n if (isNegative && components > 1) insert(1, (').append('))\n }\n }\n }\n}\n\nprivate fun\nStringBuilder.appendFractional(whole: Int, fractional: Int, fractionalSize: Int, unit: String, isoZeroes: Boolean) {\n append(whole)\n if (fractional != 0) {\n append('.')\n val fracString = fractional.toString().padStart(fractionalSize, '0')\n val nonZeroDigits = fracString.indexOfLast { it != '0' } + 1\n when {\n !isoZeroes && nonZeroDigits < 3 -> appendRange(fracString, 0, nonZeroDigits)\n else -> appendRange(fracString, 0, ((nonZeroDigits + 2) / 3) * 3)\n }\n append(unit)\n }\n}\n\n/**\n * Returns a string representation of this duration value expressed in the given [unit] and formatted with the specified [decimals] number of digits after decimal point.\n * Special cases:\n * - an infinite duration is formatted as `\"Infinity\"` or `\"-Infinity\"` without a unit.\n * @param decimals the number of digits after decimal point to show. The value must be non-negative.\n * No more than 12 decimals will be shown, even if a larger number is requested.\n * @return the value of duration in the specified [unit] followed by that unit abbreviated name: `d`, `h`, `m`, `s`, `ms`, `us`, or `ns`. \n * @throws IllegalArgumentException if [decimals] is less than zero.\n * @sample samples.time.Durations.toStringDecimals\n */\n public fun toString(unit: DurationUnit, decimals: Int = 0): String {\n require(decimals >= 0) { \"decimals must be not negative, but was $decimals\" }\n val number = toDouble(unit)\n if (number.isInfinite()) return number.toString()\n return formatToExactDecimals(number, decimals.coerceAtMost(12)) + unit.shortName()\n}\n\n/**\n * Returns an ISO-8601 based string representation of this duration.\n * The returned value is presented in the format `PThHmMs.fS`, where `h`, `m`, `s` are the integer components of this duration (see [toComponents]) and `f` is a fractional part of second. Depending on the roundness of the value the fractional part can be formatted with either 0, 3, 6, or 9 decimal digits.\n * The infinite duration is represented as `\"PT9999999999999999H\"` which is larger than any

```



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*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Int.microseconds' extension property from
Duration.Companion instead.", ReplaceWith("this.microseconds",
"\"kotlin.time.Duration.Companion.microseconds\""))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince
= "1.8")\npublic val Int.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a
[Duration] equal to this [Long] number of microseconds.
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Long.microseconds' extension property
from Duration.Companion instead.", ReplaceWith("this.microseconds",
"\"kotlin.time.Duration.Companion.microseconds\""))\n@DeprecatedSinceKotlin(warningSince
= "1.5", errorSince = "1.8")\npublic val Long.microseconds get() =
toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a [Duration] equal to this [Double] number of
microseconds.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Double.microseconds' extension property
from Duration.Companion instead.", ReplaceWith("this.microseconds",
"\"kotlin.time.Duration.Companion.microseconds\""))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince
= "1.8")\npublic val Double.microseconds get() = toDuration(DurationUnit.MICROSECONDS)\n\n/** Returns a
[Duration] equal to this [Int] number of milliseconds.
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Int.milliseconds' extension property from
Duration.Companion instead.", ReplaceWith("this.milliseconds",
"\"kotlin.time.Duration.Companion.milliseconds\""))\n@DeprecatedSinceKotlin(warningSince
= "1.5", errorSince = "1.8")\npublic val Int.milliseconds get() =
toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a [Duration] equal to this [Long] number of
milliseconds. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Long.milliseconds' extension
property from Duration.Companion instead.", ReplaceWith("this.milliseconds",
"\"kotlin.time.Duration.Companion.milliseconds\""))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\npublic val Long.milliseconds get() = toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a
[Duration] equal to this [Double] number of milliseconds.\n *\n * @throws IllegalArgumentException if this
[Double] value is `NaN`.\n *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use
'Double.milliseconds' extension property from Duration.Companion instead.", ReplaceWith("this.milliseconds",
"\"kotlin.time.Duration.Companion.milliseconds\""))\n@DeprecatedSinceKotlin(warningSince
= "1.5", errorSince = "1.8")\npublic val Double.milliseconds get() =
toDuration(DurationUnit.MILLISECONDS)\n\n/** Returns a [Duration] equal to this [Int] number of seconds.
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Int.seconds' extension property from
Duration.Companion instead.", ReplaceWith("this.seconds",
"\"kotlin.time.Duration.Companion.seconds\""))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\npublic val Int.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration] equal to
this [Long] number of seconds. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use
'Long.seconds' extension property from Duration.Companion instead.", ReplaceWith("this.seconds",
"\"kotlin.time.Duration.Companion.seconds\""))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\npublic val Long.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration]
equal to this
[Double] number of seconds.\n *\n * @throws IllegalArgumentException if this [Double] value is `NaN`.\n
*\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use 'Double.seconds' extension property from
Duration.Companion instead.", ReplaceWith("this.seconds",
"\"kotlin.time.Duration.Companion.seconds\""))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =
"1.8")\npublic val Double.seconds get() = toDuration(DurationUnit.SECONDS)\n\n/** Returns a [Duration]
equal to this [Int] number of minutes. *\n@SinceKotlin("1.3")\n@ExperimentalTime\n@Deprecated("Use
'Int.minutes' extension property from Duration.Companion instead.", ReplaceWith("this.minutes",
"\"kotlin.time.Duration.Companion.minutes\""))\n@DeprecatedSinceKotlin(warningSince = "1.5", errorSince =

```

```

`1.8`)
public val Int.minutes get() = toDuration(DurationUnit.MINUTES)
/** Returns a [Duration] equal to this [Long] number of minutes.
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Long.minutes' extension property from Duration.Companion instead.", ReplaceWith("this.minutes",
"kotlin.time.Duration.Companion.minutes"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public val Long.minutes get() = toDuration(DurationUnit.MINUTES)
/** Returns a [Duration] equal to this [Double] number of minutes.
 * @throws IllegalArgumentException if this [Double] value is `NaN`
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Double.minutes' extension property from Duration.Companion instead.", ReplaceWith("this.minutes",
"kotlin.time.Duration.Companion.minutes"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public val Double.minutes get() = toDuration(DurationUnit.MINUTES)
/** Returns a [Duration] equal to this [Int] number of hours.
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Int.hours' extension property from Duration.Companion instead.", ReplaceWith("this.hours",
"kotlin.time.Duration.Companion.hours"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public val Int.hours get() = toDuration(DurationUnit.HOURS)
/** Returns a [Duration] equal to this [Long] number of hours.
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Long.hours' extension property from Duration.Companion instead.", ReplaceWith("this.hours",
"kotlin.time.Duration.Companion.hours"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public val Long.hours get() = toDuration(DurationUnit.HOURS)
/** Returns a [Duration] equal to this [Double] number of hours.
 * @throws IllegalArgumentException if this [Double] value is `NaN`
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Double.hours' extension property from Duration.Companion instead.", ReplaceWith("this.hours",
"kotlin.time.Duration.Companion.hours"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public
val Double.hours get() = toDuration(DurationUnit.HOURS)
/** Returns a [Duration] equal to this [Int] number of days.
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Int.days' extension property from Duration.Companion instead.", ReplaceWith("this.days",
"kotlin.time.Duration.Companion.days"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public val Int.days get() = toDuration(DurationUnit.DAYS)
/** Returns a [Duration] equal to this [Long] number of days.
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Long.days' extension property from Duration.Companion instead.", ReplaceWith("this.days",
"kotlin.time.Duration.Companion.days"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public val Long.days get() = toDuration(DurationUnit.DAYS)
/** Returns a [Duration] equal to this [Double] number of days.
 * @throws IllegalArgumentException if this [Double] value is `NaN`
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * @Deprecated("Use 'Double.days' extension property from Duration.Companion instead.", ReplaceWith("this.days",
"kotlin.time.Duration.Companion.days"))
 * @DeprecatedSinceKotlin(warningSince = `1.5`, errorSince =
`1.8`)
public val Double.days get() = toDuration(DurationUnit.DAYS)
/** Returns a duration whose value is the specified [duration] value multiplied by this number.
 * @SinceKotlin("1.6")
 * @WasExperimental(ExperimentalTime::class)
 * @kotlin.internal.InlineOnly
 * public inline operator fun Int.times(duration: Duration): Duration = duration * this
/** Returns a duration whose value is the specified [duration] value multiplied by this number.
 * @throws IllegalArgumentException if the operation results in a `NaN` value.
 * @SinceKotlin("1.6")
 * @WasExperimental(ExperimentalTime::class)
 * @kotlin.internal.InlineOnly
 * public inline operator fun Double.times(duration: Duration): Duration = duration * this
private fun
parseDuration(value: String, strictIso: Boolean): Duration {
 var length = value.length
 if (length == 0) throw IllegalArgumentException("The string is empty")
 var index = 0
 var result = Duration.ZERO
 val infinityString = "Infinity"
 when (value[index]) {
 '+', '-' -> index++
 }
 val hasSign = index > 0

```

```

val isNegative = hasSign && value.startsWith('-')\n when {\n length <= index ->\n throw
IllegalArgumentException("No components")\n value[index] == 'P' -> {\n if (++index == length) throw
IllegalArgumentException()\n val nonDigitSymbols = "+-." \n var isTimeComponent = false\n
var prevUnit: DurationUnit? = null\n while (index < length) {\n if (value[index] == 'T') {\n
 if (isTimeComponent
 || ++index == length) throw IllegalArgumentException()\n isTimeComponent = true\n
continue\n }\n val component = value.substringWhile(index) { it in '0'..'9' || it in nonDigitSymbols
}\n if (component.isEmpty()) throw IllegalArgumentException()\n index += component.length\n
 val unitChar = value.getOrNull(index) { throw IllegalArgumentException("Missing unit for value
$component") }\n index++\n val unit = durationUnitByIsoChar(unitChar, isTimeComponent)\n
 if (prevUnit != null && prevUnit <= unit) throw IllegalArgumentException("Unexpected order of duration
components")\n prevUnit = unit\n val dotIndex = component.indexOf('.')\n if (unit ==
DurationUnit.SECONDS && dotIndex > 0) {\n val whole = component.substring(0, dotIndex)\n
 result += parseOverLongIsoComponent(whole).toDuration(unit)\n
 result += component.substring(dotIndex).toDouble().toDuration(unit)\n } else {\n
result += parseOverLongIsoComponent(component).toDuration(unit)\n }\n }\n }\n strictIso
->\n throw IllegalArgumentException()\n value.regionMatches(index, infinityString, 0, length =
maxOf(length - index, infinityString.length), ignoreCase = true) -> {\n result = Duration.INFINITE\n }\n
 else -> {\n // parse default string format\n var prevUnit: DurationUnit? = null\n var
afterFirst = false\n var allowSpaces = !hasSign\n if (hasSign && value[index] == '(' && value.last()
== ')') {\n allowSpaces = true\n if (++index == --length) throw IllegalArgumentException("No
components")\n }\n while (index < length) {\n if
(afterFirst && allowSpaces) {\n index = value.skipWhile(index) { it == ' ' }\n }\n
afterFirst = true\n val component = value.substringWhile(index) { it in '0'..'9' || it == ' ' }\n if
(component.isEmpty()) throw IllegalArgumentException()\n index += component.length\n val
unitName = value.substringWhile(index) { it in 'a'..'z' }\n index += unitName.length\n val unit =
durationUnitByShortName(unitName)\n if (prevUnit != null && prevUnit <= unit) throw
IllegalArgumentException("Unexpected order of duration components")\n prevUnit = unit\n val
dotIndex = component.indexOf('.')\n if (dotIndex > 0) {\n val whole = component.substring(0,
dotIndex)\n result += whole.toLong().toDuration(unit)\n result +=
component.substring(dotIndex).toDouble().toDuration(unit)\n
 if (index < length) throw IllegalArgumentException("Fractional component must be last")\n
 }\n result += component.toLong().toDuration(unit)\n }\n }\n }\n }\n
return if (isNegative) -result else result\n\n\nprivate fun parseOverLongIsoComponent(value: String): Long {\n
val length = value.length\n var startIndex = 0\n if (length > 0 && value[0] in "+-") startIndex++\n if ((length
- startIndex) > 16 && (startIndex..value.lastIndex).all { value[it] in '0'..'9' }) {\n // all chars are digits, but more
than ceiling(log10(MAX_MILLIS / 1000)) of them\n return if (value[0] == '-') Long.MIN_VALUE else
Long.MAX_VALUE\n }\n // TODO: replace with just toLong after min JDK becomes 8\n return if
(value.startsWith("+")) value.drop(1).toLong() else value.toLong()\n\n\n\nprivate inline fun
String.substringWhile(startIndex: Int, predicate:
(Char) -> Boolean): String =\n substring(startIndex, skipWhile(startIndex, predicate))\n\nprivate inline fun
String.skipWhile(startIndex: Int, predicate: (Char) -> Boolean): Int {\n var i = startIndex\n while (i < length &&
predicate(this[i])) i++\n return i\n}\n\n\n\n// The ranges are chosen so that they are:\n// - symmetric relative to
zero: this greatly simplifies operations with sign, e.g. unaryMinus and minus.\n// - non-overlapping, but adjacent:
the first value that doesn't fit in nanos range, can be exactly represented in millis.\n\ninternal const val
NANOS_IN_MILLIS = 1_000_000\n// maximum number duration can store in nanosecond range\ninternal const
val MAX_NANOS = Long.MAX_VALUE / 2 / NANOS_IN_MILLIS * NANOS_IN_MILLIS - 1 // ends in
..._999_999\n// maximum number duration can store in millisecond range, also encodes an infinite value\ninternal

```

```

const val MAX_MILLIS = Long.MAX_VALUE / 2 // MAX_NANOS expressed in milliseconds
private const val MAX_NANOS_IN_MILLIS
 = MAX_NANOS / NANOS_IN_MILLIS
private fun nanosToMillis(nanos: Long): Long = nanos /
 NANOS_IN_MILLIS
private fun millisToNanos(millis: Long): Long = millis * NANOS_IN_MILLIS
private fun durationOfNanos(normalNanos: Long) = Duration(normalNanos shl 1)
private fun durationOfMillis(normalMillis: Long) = Duration((normalMillis shl 1) + 1)
private fun durationOf(normalValue: Long, unitDiscriminator: Int) = Duration((normalValue shl 1) + unitDiscriminator)
private fun durationOfNanosNormalized(nanos: Long) =
 if (nanos in -MAX_NANOS..MAX_NANOS) {
 durationOfNanos(nanos)
 } else {
 durationOfMillis(nanosToMillis(nanos))
 }
private fun durationOfMillisNormalized(millis: Long) =
 if (millis in -MAX_NANOS_IN_MILLIS..MAX_NANOS_IN_MILLIS) {
 durationOfNanos(millisToNanos(millis))
 } else {
 durationOfMillis(millis.coerceIn(-MAX_MILLIS, MAX_MILLIS))
 }
internal expect val durationAssertionsEnabled: Boolean
internal expect fun formatToExactDecimals(value: Double, decimals: Int): String
internal expect fun formatUpToDecimals(value: Double, decimals: Int): String
"/*
 * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the
 * license/LICENSE.txt file.
 */
@file:kotlin.jvm.JvmName("UnsignedKt")
package kotlin
@PublishedApi
internal fun uintCompare(v1: Int, v2: Int): Int = (v1 xor Int.MIN_VALUE).compareTo(v2 xor Int.MIN_VALUE)
@PublishedApi
internal fun ulongCompare(v1: Long, v2: Long): Int = (v1 xor Long.MIN_VALUE).compareTo(v2 xor Long.MIN_VALUE)
@PublishedApi
internal fun uintDivide(v1: UInt, v2: UInt): UInt = (v1.toLong() / v2.toLong()).toUInt()
@PublishedApi
internal fun uintRemainder(v1: UInt, v2: UInt): UInt = (v1.toLong() % v2.toLong()).toUInt()
// Division and remainder are based on Guava's UnsignedLongs implementation
// Copyright 2011 The Guava Authors
@PublishedApi
internal fun ulongDivide(v1: ULong, v2: ULong): ULong {
 val dividend = v1.toLong()
 val divisor = v2.toLong()
 if (divisor < 0) // i.e., divisor >= 2^63
 return if (v1 < v2) ULong(0) else ULong(1)
 // Optimization - use signed division if both dividend and divisor < 2^63
 if (dividend >= 0) {
 return ULong(dividend / divisor)
 }
 // Otherwise, approximate the quotient, check, and correct if necessary.
 val quotient = ((dividend ushr 1) / divisor) shl 1
 val rem = dividend - quotient * divisor
 return ULong(quotient + if (ULong(rem) >= ULong(divisor)) 1 else 0)
}
@PublishedApi
internal fun ulongRemainder(v1: ULong, v2: ULong): ULong {
 val dividend = v1.toLong()
 val divisor = v2.toLong()
 if (divisor < 0) // i.e., divisor >= 2^63
 return if (v1 < v2) {
 v1 // dividend < divisor
 } else {
 v1 - v2 // dividend >= divisor
 }
 // Optimization - use signed modulus if both dividend and divisor < 2^63
 if (dividend >= 0) {
 return ULong(dividend % divisor)
 }
 // Otherwise, approximate the quotient, check, and correct if necessary.
 val quotient = ((dividend ushr 1) / divisor) shl 1
 val rem = dividend - quotient * divisor
 return ULong(rem - if (ULong(rem) >= ULong(divisor)) divisor else 0)
}
@PublishedApi
internal fun doubleToUInt(v: Double): UInt = when {
 v.isNaN() -> 0u
 v <= UInt.MIN_VALUE.toDouble() -> UInt.MIN_VALUE
 v >= UInt.MAX_VALUE.toDouble() -> UInt.MAX_VALUE
 v <= Int.MAX_VALUE -> v.toInt().toUInt()
 else -> (v - Int.MAX_VALUE).toInt().toUInt() + Int.MAX_VALUE.toUInt()
 // Int.MAX_VALUE < v < UInt.MAX_VALUE
}
@PublishedApi
internal fun doubleToULong(v: Double): ULong = when {
 v.isNaN() -> 0u
 v <= ULong.MIN_VALUE.toDouble() -> ULong.MIN_VALUE
 v >= ULong.MAX_VALUE.toDouble() -> ULong.MAX_VALUE
 v < Long.MAX_VALUE -> v.toLong().toULong()
 // Real values from Long.MAX_VALUE to (Long.MAX_VALUE + 1) are not representable in Double, so don't handle them.
 else -> (v - 9223372036854775808.0).toLong().toULong() + 9223372036854775808uL
 // Long.MAX_VALUE + 1 < v < ULong.MAX_VALUE
}
@PublishedApi
internal fun uintToDouble(v: Int): Double = (v and Int.MAX_VALUE).toDouble() + (v ushr 31 shl 30).toDouble() * 2
@PublishedApi
internal fun

```



```

ulongToDouble(v: Long): Double = (v ushr 11).toDouble() * 2048 + (v and 2047)
ulongToString(v: Long): String = ulongToString(v, 10)
internal fun ulongToString(v: Long, base: Int): String {
 if (v >= 0) return v.toString(base)
 var quotient = ((v ushr 1) / base) shl 1
 var rem = v - quotient * base
 if (rem >= base) {
 rem -= base
 quotient += 1
 }
 return quotient.toString(base) +
 rem.toString(base)
}
"/**
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 * License.
 * You may obtain a copy of the License at
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 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed
 * on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
 * implied.
 * See the License for the specific language governing permissions and
 * limitations under the
 * License.
 */
package kotlin.internal
/**
 * Specifies that the corresponding type parameter is not used for
 * unsafe operations such as casts or 'is' checks
 * That means it's completely safe to use generic types as argument for
 * such parameter.
 */
@Target(AnnotationTarget.TYPE_PARAMETER)
@Retention(AnnotationRetention.BINARY)
internal
annotation class PureReifiable
/**
 * Specifies that the corresponding built-in method exists depending on
 * platform.
 *
 * Current implementation for JVM looks whether method with same JVM descriptor exists in the module JDK.
 * For example MutableMap.remove(K, V) available only if corresponding
 * method 'java.util.Map.remove(Ljava/lang/Object;Ljava/lang/Object;)Z' is defined in JDK (i.e. for major versions >= 8)
 */
@Target(AnnotationTarget.FUNCTION)
@Retention(AnnotationRetention.BINARY)
internal annotation
class PlatformDependent
/**
 * When applied to a function or property, enables a compiler optimization that
 * evaluates that function or property
 * at compile-time and replaces calls to it with the computed result.
 */
@Target(AnnotationTarget.CONSTRUCTOR, AnnotationTarget.FUNCTION,
AnnotationTarget.PROPERTY)
@Retention(AnnotationRetention.BINARY)
@SinceKotlin("1.7")
internal
annotation class IntrinsicConstEvaluation
"/**
 * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
 * Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that
 * can be found in the license/LICENSE.txt file.
 */
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("CollectionsKt")
package
kotlin.collections
/**
 * Given an [iterator] function constructs an [Iterable] instance that returns values through
 * the [Iterator]
 * provided by that function.
 * @sample samples.collections.Iterables.Building.iterable
 */
@kotlin.internal.InlineOnly
public inline fun <T> Iterable(crossinline iterator: () -> Iterator<T>): Iterable<T>
= object : Iterable<T> {
 override fun iterator(): Iterator<T> = iterator()
}
/**
 * A wrapper over another
 * [Iterable] (or any other object that can produce an [Iterator]) that returns
 * an indexing iterator.
 */
internal class IndexingIterable<out T>(private val iteratorFactory: () -> Iterator<T>) : Iterable<IndexedValue<T>> {
 override
 fun iterator(): Iterator<IndexedValue<T>> = IndexingIterator(iteratorFactory())
}
/**
 * Returns the size of
 * this iterable if it is known, or
 * `null` otherwise.
 */
@PublishedApi
internal fun <T> Iterable<T>.collectionSizeOrNull(): Int? = if (this is
Collection<*>) this.size else null
/**
 * Returns the size of this iterable if it is known, or the specified [default]
 * value otherwise.
 */
@PublishedApi
internal fun <T> Iterable<T>.collectionSizeOrDefault(default: Int): Int = if
(this is Collection<*>) this.size else default
/**
 * Returns a single list of all elements from all collections in
 * the given collection.
 */
@sample samples.collections.Iterables.Operations.flattenIterable
public fun <T>
Iterable<Iterable<T>>.flatten(): List<T> {
 val result = ArrayList<T>()
 for (element in this) {
 result.addAll(element)
 }
 return result
}
/**
 * Returns a pair of lists, where
 * first list is built from
 * the first values of each pair from this collection,
 * second list is built from the second values of each pair from
 * this collection.
 */
@sample samples.collections.Iterables.Operations.unzipIterable
public fun <T, R> Iterable<Pair<T, R>>.unzip(): Pair<List<T>, List<R>> {
 val expectedSize =
 collectionSizeOrDefault(10)
 val listT = ArrayList<T>(expectedSize)
 val listR =
 ArrayList<R>(expectedSize)
 for (pair in this) {
 listT.add(pair.first)
 listR.add(pair.second)
 }
}

```

return listT to listR\n\n","/\*\n \* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n

```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SequencesKt")\n\npackage\nkotlin.sequences\n\nimport kotlin.random.Random\n\n/**\n * Given an [iterator] function constructs a [Sequence]\n * that returns values through the [Iterator]\n * provided by that function.\n * The values are evaluated lazily, and the\n * sequence is potentially infinite.\n */\n * @sample samples.collections.Sequences.Building.sequenceFromIterator\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence(crossinline iterator: () -> Iterator<T>):\nSequence<T> = object : Sequence<T> {\n override fun iterator(): Iterator<T> = iterator()\n}\n\n/**\n * Creates a\n * sequence that returns all elements from this iterator. The sequence is constrained to be iterated only once.\n */\n * @sample samples.collections.Sequences.Building.sequenceFromIterator\n */\npublic fun <T>\nIterator<T>.asSequence(): Sequence<T> = Sequence { this }.constrainOnce()\n\n/**\n * Creates a sequence that\n * returns the specified values.\n */\n * @sample samples.collections.Sequences.Building.sequenceOfValues\n */\npublic fun <T> sequenceOf(vararg elements: T): Sequence<T> = if (elements.isEmpty()) emptySequence() else\nelements.asSequence()\n\n/**\n * Returns an empty sequence.\n */\npublic fun <T> emptySequence():\nSequence<T> = EmptySequence\n\nprivate object EmptySequence : Sequence<Nothing>,\nDropTakeSequence<Nothing> {\n override fun iterator():\nIterator<Nothing> = EmptyIterator\n override fun drop(n: Int) = EmptySequence\n override fun take(n: Int) =\nEmptySequence\n}\n\n/**\n * Returns this sequence if it's not `null` and the empty sequence otherwise.\n */\n * @sample samples.collections.Sequences.Usage.sequenceOrEmpty\n */\n\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>?.orEmpty():\nSequence<T> = this ?: emptySequence()\n\n/**\n * Returns a sequence that iterates through the elements either of\n * this sequence\n * or, if this sequence turns out to be empty, of the sequence returned by [defaultValue] function.\n */\n * @sample samples.collections.Sequences.Usage.sequenceIfEmpty\n */\n@SinceKotlin("1.3")\npublic fun\n<T> Sequence<T>.ifEmpty(defaultValue: () -> Sequence<T>): Sequence<T> = sequence {\n val iterator =\nthis@ifEmpty.iterator()\n if (iterator.hasNext()) {\n yieldAll(iterator)\n } else {\n yieldAll(defaultValue())\n }\n}\n\n/**\n * Returns a sequence\n * of all elements from all sequences in this sequence.\n */\n * The operation is _intermediate_ and _stateless_.\n */\n * @sample samples.collections.Sequences.Transformations.flattenSequenceOfSequences\n */\npublic fun <T>\nSequence<Sequence<T>>.flatten(): Sequence<T> = flatten { it.iterator() }\n\n/**\n * Returns a sequence of all\n * elements from all iterables in this sequence.\n */\n * The operation is _intermediate_ and _stateless_.\n */\n * @sample samples.collections.Sequences.Transformations.flattenSequenceOfLists\n */\n\n@kotlin.jvm.JvmName("flattenSequenceOfIterable")\npublic fun <T> Sequence<Iterable<T>>.flatten():\nSequence<T> = flatten { it.iterator() }\n\nprivate fun <T, R> Sequence<T>.flatten(iterator: (T) -> Iterator<R>):\nSequence<R> {\n if (this is TransformingSequence<*, *>) {\n return (this as TransformingSequence<*,\nT>).flatten(iterator)\n }\n return FlatteningSequence(this, { it }, iterator)\n}\n\n/**\n * Returns a pair of lists,\n * where\n * *first* list\n * is built from the first values of each pair from this sequence.\n * *second* list is built from the second values of\n * each pair from this sequence.\n */\n * The operation is _terminal_.\n */\n * @sample\nsamples.collections.Sequences.Transformations.unzip\n */\npublic fun <T, R> Sequence<Pair<T, R>>.unzip():\nPair<List<T>, List<R>> {\n val listT = ArrayList<T>()\n val listR = ArrayList<R>()\n for (pair in this) {\n listT.add(pair.first)\n listR.add(pair.second)\n }\n return listT to listR\n}\n\n/**\n * Returns a sequence that\n * yields elements of this sequence randomly shuffled.\n */\n * Note that every iteration of the sequence returns\n * elements in a different order.\n */\n * The operation is _intermediate_ and _stateful_.\n */\n\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.shuffled(): Sequence<T> = shuffled(Random)\n\n/**\n * Returns a sequence that yields elements of this sequence randomly shuffled\n * using the specified [random]\n * instance as the source of randomness.\n
```

\*\n \* Note that every iteration of the sequence returns elements in a different order.\n \*\n \* The operation is \_intermediate\_ and \_stateful\_.\n \*\n @SinceKotlin("1.4")\n public fun <T> Sequence<T>.shuffled(random: Random): Sequence<T> = sequence<T> {\n val buffer = toMutableList()\n while (buffer.isNotEmpty()) {\n val j = random.nextInt(buffer.size)\n val last = buffer.removeLast()\n val value = if (j < buffer.size) buffer.set(j, last) else last\n yield(value)\n }\n}\n\n\*\*\n \* A sequence that returns the values from the underlying [sequence] that either match or do not match\n \* the specified [predicate].\n \*\n \* @param sendWhen If `true`, values for which the predicate returns `true` are returned. Otherwise,\n \* values for which the predicate returns `false` are returned\n \*\n internal class FilteringSequence<T>(\n private val sequence: Sequence<T>,\n private val sendWhen: Boolean = true,\n private val predicate: (T) -> Boolean)\n : Sequence<T> {\n override fun iterator(): Iterator<T> = object : Iterator<T> {\n val iterator = sequence.iterator()\n var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n var nextItem: T? = null\n private fun calcNext() {\n while (iterator.hasNext()) {\n val item = iterator.next()\n if (predicate(item) == sendWhen) {\n nextItem = item\n nextState = 1\n return\n }\n }\n nextState = 0\n }\n override fun next(): T {\n if (nextState == -1)\n calcNext()\n if (nextState == 0)\n throw NoSuchElementException()\n val result = nextItem\n nextItem = null\n nextState = -1\n @SuppressWarnings("UNCHECKED\_CAST")\n return result as T\n }\n }\n override fun hasNext(): Boolean {\n if (nextState == -1)\n calcNext()\n return nextState == 1\n }\n }\n}\n\n\*\*\n \* A sequence which returns the results of applying the given [transformer] function to the values\n \* in the underlying [sequence].\n \*\n internal class TransformingSequence<T, R>\n constructor(private val sequence: Sequence<T>,\n private val transformer: (T) -> R) : Sequence<R> {\n override fun iterator(): Iterator<R> = object : Iterator<R> {\n val iterator = sequence.iterator()\n override fun next(): R {\n return transformer(iterator.next())\n }\n }\n }\n override fun hasNext(): Boolean {\n return iterator.hasNext()\n }\n }\n\n internal fun <E> flatten(iterator: (R) -> Iterator<E>): Sequence<E> {\n return FlatteningSequence<T, R, E>(sequence, transformer, iterator)\n }\n}\n\n\*\*\n \* A sequence which returns the results of applying the given [transformer] function to the values\n \* in the underlying [sequence], where the transformer function takes the index of the value in the underlying\n \* sequence along with the value itself.\n \*\n internal class TransformingIndexedSequence<T, R>\n constructor(private val sequence: Sequence<T>,\n private val transformer: (Int, T) -> R) : Sequence<R> {\n override fun iterator(): Iterator<R> = object : Iterator<R> {\n val iterator = sequence.iterator()\n var index = 0\n override fun next(): R {\n return transformer(checkIndexOverflow(index++), iterator.next())\n }\n }\n }\n override fun hasNext(): Boolean {\n return iterator.hasNext()\n }\n }\n}\n\n\*\*\n \* A sequence which combines values from the underlying [sequence] with their indices and returns them as\n \* [IndexedValue] objects.\n \*\n internal class IndexingSequence<T>\n constructor(private val sequence: Sequence<T>) : Sequence<IndexedValue<T>> {\n override fun iterator(): Iterator<IndexedValue<T>> = object : Iterator<IndexedValue<T>> {\n val iterator = sequence.iterator()\n var index = 0\n override fun next(): IndexedValue<T> {\n return IndexedValue(checkIndexOverflow(index++), iterator.next())\n }\n }\n }\n override fun hasNext(): Boolean {\n return iterator.hasNext()\n }\n }\n}\n\n\*\*\n \* A sequence which takes the values from two parallel underlying sequences, passes them to the given\n \* [transform] function and returns the values returned by that function. The sequence stops returning\n \* values as soon as one of the underlying sequences stops returning values.\n \*\n internal class MergingSequence<T1, T2, V>\n constructor(\n private val sequence1: Sequence<T1>,\n private val sequence2: Sequence<T2>,\n private val transform: (T1, T2) -> V)\n : Sequence<V> {\n override fun iterator(): Iterator<V> = object : Iterator<V> {\n val iterator1 = sequence1.iterator()\n val iterator2 = sequence2.iterator()\n override fun next(): V {\n return transform(iterator1.next(), iterator2.next())\n }\n }\n }\n override fun hasNext(): Boolean {\n return iterator1.hasNext() && iterator2.hasNext()\n }\n }\n}\n\n internal class FlatteningSequence<T, R, E>\n constructor(\n private val sequence: Sequence<T>,\n private val transformer: (T) -> R,\n private val iterator: (R) -> Iterator<E>)\n : Sequence<E> {\n override fun iterator(): Iterator<E> = object

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: Iterator<E> {\n val iterator = sequence.iterator()\n var itemIterator: Iterator<E>? = null\n\n override\n fun next(): E {\n if (!ensureItemIterator())\n throw NoSuchElementException()\n return\n itemIterator!!.next()\n }\n\n override fun hasNext(): Boolean {\n return ensureItemIterator()\n }\n\n private fun ensureItemIterator(): Boolean {\n if (itemIterator?.hasNext() == false)\n itemIterator = null\n\n while (itemIterator == null) {\n if (!iterator.hasNext())\n return false\n } else\n {\n val element = iterator.next()\n val nextItemIterator = iterator(transformer(element))\n if (nextItemIterator.hasNext())\n itemIterator = nextItemIterator\n return true\n }\n }\n }\n\n internal fun <T, C, R>\n flatMapIndexed(source: Sequence<T>, transform: (Int, T) -> C, iterator: (C) -> Iterator<R>): Sequence<R> =\n sequence {\n var index = 0\n for (element in source) {\n val result =\n transform(checkIndexOverflow(index++), element)\n yieldAll(iterator(result))\n }\n }\n\n /**\n * A\n * sequence that supports drop(n) and take(n) operations\n *\n * internal interface DropTakeSequence<T> :\n * Sequence<T> {\n *\n * fun drop(n: Int): Sequence<T>\n * fun take(n: Int): Sequence<T>\n *\n * /**\n * * A sequence that skips [startIndex]\n * * values from the underlying [sequence]\n * * and stops returning values right before [endIndex], i.e. stops at `endIndex\n * * - 1`\n * *\n * * internal class SubSequence<T>(\n * * private val sequence: Sequence<T>,\n * * private val startIndex: Int,\n * * private val endIndex: Int)\n * * : Sequence<T>, DropTakeSequence<T> {\n * * init {\n * * require(startIndex >= 0) {\n * * \"startIndex should be non-negative, but is $startIndex\"\n * * }\n * * require(endIndex >= 0) {\n * * \"endIndex should be\n * * non-negative, but is $endIndex\"\n * * }\n * * require(endIndex >= startIndex) {\n * * \"endIndex should be not less than\n * * startIndex, but was $endIndex < $startIndex\"\n * * }\n * * }\n * * private val count: Int get() = endIndex - startIndex\n * * override fun drop(n: Int): Sequence<T> = if (n >= count) emptySequence() else SubSequence(sequence, startIndex\n * * + n, endIndex)\n * * override fun take(n: Int): Sequence<T> = if (n >=\n * * count)\n * * this else SubSequence(sequence, startIndex, startIndex + n)\n * *\n * * override fun iterator() = object :\n * * Iterator<T> {\n * * val iterator = sequence.iterator()\n * * var position = 0\n * * // Shouldn't be called from\n * * constructor to avoid premature iteration\n * * private fun drop() {\n * * while (position < startIndex &&\n * * iterator.hasNext()) {\n * * iterator.next()\n * * position++\n * * }\n * * }\n * * override fun\n * * hasNext(): Boolean {\n * * drop()\n * * return (position < endIndex) && iterator.hasNext()\n * * }\n * * override fun next(): T {\n * * drop()\n * * if (position >= endIndex)\n * * throw\n * * NoSuchElementException()\n * * position++\n * * return iterator.next()\n * * }\n * * }\n * *\n * * /**\n * * *\n * * A\n * * sequence that returns at most [count] values from the underlying [sequence], and stops returning values\n * * as soon\n * * as that count is reached.\n * *\n * * internal class\n * * TakeSequence<T>(\n * * private val sequence: Sequence<T>,\n * * private val count: Int)\n * * : Sequence<T>,\n * * DropTakeSequence<T> {\n * * init {\n * * require(count >= 0) {\n * * \"count must be non-negative, but was $count.\"\n * * }\n * * }\n * * override fun drop(n: Int): Sequence<T> = if (n >= count) emptySequence() else\n * * SubSequence(sequence, n, count)\n * * override fun take(n: Int): Sequence<T> = if (n >= count) this else\n * * TakeSequence(sequence, n)\n * *\n * * override fun iterator(): Iterator<T> = object : Iterator<T> {\n * * var left =\n * * count\n * * val iterator = sequence.iterator()\n * * override fun next(): T {\n * * if (left == 0)\n * * throw\n * * NoSuchElementException()\n * * left--\n * * return iterator.next()\n * * }\n * * override fun hasNext():\n * * Boolean {\n * * return left > 0 && iterator.hasNext()\n * * }\n * * }\n * *\n * * /**\n * * *\n * * A sequence that returns values\n * * from the underlying [sequence] while the [predicate] function returns `true`,\n * * and stops returning values once the function returns `false` for the next element.\n * *\n * * internal class\n * * TakeWhileSequence<T>(\n * * constructor(\n * * private val sequence: Sequence<T>,\n * * private val predicate: (T) ->\n * * Boolean)\n * * : Sequence<T> {\n * * override fun iterator(): Iterator<T> = object : Iterator<T> {\n * * val iterator =\n * * sequence.iterator()\n * * var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n * * var nextItem: T?\n * * = null\n * * private fun calcNext() {\n * * if (iterator.hasNext())\n * * val item = iterator.next()\n * * if (predicate(item)) {\n * * nextState = 1\n * * nextItem = item\n * * return\n * * }\n * * nextState = 0\n * * }\n * * override fun next(): T {\n * * if (nextState == -1)\n
```

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calcNext() // will change nextState\n if (nextState == 0)\n throw NoSuchElementException()\n @Suppress("UNCHECKED_CAST")\n val result = nextItem as T\n // Clean next to avoid\n keeping reference on yielded instance\n nextItem = null\n nextState = -1\n return result\n }\n\n override fun hasNext(): Boolean {\n if (nextState == -1)\n calcNext() // will change\n nextState\n return nextState == 1\n }\n}\n\n/**\n * A sequence that skips the specified number of\n values from the underlying [sequence] and returns\n * all values after that.\n */\ninternal class DropSequence<T>(\n private val sequence: Sequence<T>,\n private val count: Int\n) : Sequence<T>, DropTakeSequence<T> {\n init\n {\n require(count >= 0) { \"count must be non-negative, but was $count.\" }\n }\n override fun drop(n:\n Int): Sequence<T> = (count + n).let { n1 -> if (n1 < 0) DropSequence(this, n) else DropSequence(sequence, n1) }\n override fun take(n: Int): Sequence<T>\n = (count + n).let { n1 -> if (n1 < 0) TakeSequence(this, n) else SubSequence(sequence, count, n1) }\n override\n fun iterator(): Iterator<T> = object : Iterator<T> {\n val iterator = sequence.iterator()\n var left = count\n // Shouldn't be called from constructor to avoid premature iteration\n private fun drop() {\n while (left\n > 0 && iterator.hasNext()) {\n iterator.next()\n left--\n }\n }\n override fun\n next(): T {\n drop()\n return iterator.next()\n }\n }\n override fun hasNext(): Boolean {\n drop()\n return iterator.hasNext()\n }\n}\n\n/**\n * A sequence that skips the values from the\n underlying [sequence] while the given [predicate] returns `true` and returns\n * all values after that.\n */\ninternal\n class DropWhileSequence<T>(\n constructor(\n private val sequence: Sequence<T>,\n private val predicate:\n (T) -> Boolean\n) : Sequence<T> {\n override fun iterator(): Iterator<T> = object : Iterator<T> {\n val\n iterator = sequence.iterator()\n var dropState: Int = -1 // -1 for not dropping, 1 for nextItem, 0 for normal\n iteration\n var nextItem: T? = null\n private fun drop() {\n while (iterator.hasNext()) {\n val\n item = iterator.next()\n if (!predicate(item)) {\n nextItem = item\n dropState =\n 1\n }\n return\n }\n dropState = 0\n }\n override fun\n next(): T {\n if (dropState == -1)\n drop()\n if (dropState == 1)\n @Suppress("UNCHECKED_CAST")\n val result = nextItem as T\n nextItem = null\n dropState = 0\n return result\n }\n return iterator.next()\n }\n override\n fun hasNext(): Boolean {\n if (dropState == -1)\n drop()\n return dropState == 1 ||\n iterator.hasNext()\n }\n }\n}\n\ninternal class DistinctSequence<T, K>(\n private val source: Sequence<T>,\n private val keySelector: (T) -> K\n) : Sequence<T> {\n override fun iterator(): Iterator<T> =\n DistinctIterator(source.iterator(), keySelector)\n}\n\nprivate class DistinctIterator<T, K>(\n private val source:\n Iterator<T>,\n private val keySelector: (T) -> K\n) : AbstractIterator<T> {\n private val observed =\n HashSet<K>()\n override fun computeNext() {\n while (source.hasNext()) {\n val\n next =\n source.next()\n val key = keySelector(next)\n if (observed.add(key)) {\n setNext(next)\n return\n }\n }\n done()\n }\n}\n\nprivate class GeneratorSequence<T : Any>(\n private val\n getInitialValue: () -> T?,\n private val getNextValue: (T) -> T?
) : Sequence<T>\n{\n override fun iterator(): Iterator<T> = object : Iterator<T> {\n var nextItem: T? = null\n var\n nextState:\n Int = -2 // -2 for initial unknown, -1 for next unknown, 0 for done, 1 for continue\n private fun calcNext() {\n nextItem = if (nextState == -2) getInitialValue() else getNextValue(nextItem!)\n nextState = if\n (nextItem == null) 0 else 1\n }\n override fun next(): T {\n if (nextState < 0)\n calcNext()\n if (nextState == 0)\n throw NoSuchElementException()\n val result =\n nextItem as T\n // Do not clean nextItem (to avoid keeping reference on yielded instance) -- need to keep\n state for getNextValue\n nextState = -1\n return result\n }\n override fun\n hasNext():\n Boolean {\n if (nextState < 0)\n calcNext()\n return nextState == 1\n }\n }\n}\n\n/**\n * Returns a\n * wrapper sequence that provides values of this sequence, but ensures it can be iterated only one time.\n */\ninternal\n * The\n operation is _intermediate_ and _stateless_.\n */\ninternal\n * [IllegalStateException] is thrown on iterating the returned\n sequence for the second time and the following times.\n */\ninternal\n * \npublic fun <T> Sequence<T>.constrainOnce():\n Sequence<T> {\n // as? does not work in js\n //return this as? ConstrainedOnceSequence<T> ?
}

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ConstrainedOnceSequence(this)\n return if (this is ConstrainedOnceSequence<T>) this else
ConstrainedOnceSequence(this)\n}\n\n/**\n * Returns a sequence which invokes the function to calculate the next
value on each iteration until the function returns `null`.\n *\n * The returned sequence is constrained to be iterated
only once.\n *\n * @see constrainOnce\n * @see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequence\n */\npublic fun <T : Any>
generateSequence(nextFunction: () -> T?): Sequence<T> {\n return GeneratorSequence(nextFunction,
 { nextFunction() }).constrainOnce()\n}\n\n/**\n * Returns a sequence defined by the starting value [seed] and the
function [nextFunction],\n * which is invoked to calculate the next value based on the previous one on each
iteration.\n *\n * The sequence produces values until it encounters first `null` value.\n * If [seed] is `null`, an empty
sequence is produced.\n *\n * The sequence can be iterated multiple times, each time starting with [seed].\n *\n *
@see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithSeed\n */\n@kotlin.internal.LowPriorityInOverloadResolution\npublic fun <T : Any> generateSequence(seed: T?,
nextFunction: (T) -> T?): Sequence<T> =\n if (seed == null)\n EmptySequence\n else\n GeneratorSequence({ seed }, nextFunction)\n}\n\n/**\n * Returns a sequence defined by the function [seedFunction],
which is invoked to produce the starting value,\n * and the [nextFunction], which
is invoked to calculate the next value based on the previous one on each iteration.\n *\n * The sequence produces
values until it encounters first `null` value.\n * If [seedFunction] returns `null`, an empty sequence is produced.\n *\n *
The sequence can be iterated multiple times.\n *\n * @see kotlin.sequences.sequence\n *\n * @sample
samples.collections.Sequences.Building.generateSequenceWithLazySeed\n */\npublic fun <T : Any>
generateSequence(seedFunction: () -> T?, nextFunction: (T) -> T?): Sequence<T> =\n GeneratorSequence(seedFunction, nextFunction)\n}\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("PreconditionsKt")\n\npackage
kotlin\n\nimport kotlin.contracts.contract\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is false.\n *\n *
@sample samples.misc.Preconditions.failRequireWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic inline fun require(value: Boolean): Unit {\n contract {\n returns()
implies value\n }\n require(value) { "Failed requirement." }\n}\n\n/**\n * Throws an
[IllegalArgumentException] with the result of calling [lazyMessage] if the [value] is false.\n *\n * @sample
samples.misc.Preconditions.failRequireWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic inline fun
require(value: Boolean, lazyMessage: () -> Any): Unit {\n contract {\n returns() implies value\n }\n if
(!value) {\n val message = lazyMessage()\n throw IllegalArgumentException(message.toString())\n }\n}\n\n/**\n * Throws an [IllegalArgumentException] if the [value] is null. Otherwise returns the not null value.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?): T {\n contract {\n returns() implies (value != null)\n }\n return requireNotNull(value) { "Required value was null." }\n}\n\n/**\n * Throws an
[IllegalArgumentException] with the result of calling [lazyMessage] if the [value] is null. Otherwise\n * returns the
not null value.\n *\n * @sample samples.misc.Preconditions.failRequireNotNullWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T : Any> requireNotNull(value: T?, lazyMessage: () -> Any): T
{\n contract {\n returns() implies (value != null)\n }\n if (value == null) {\n val message =
lazyMessage()\n throw IllegalArgumentException(message.toString())\n } else {\n return value\n }\n}\n\n/**\n * Throws an [IllegalStateException] if the [value] is false.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic inline fun
check(value: Boolean): Unit {\n contract {\n returns() implies value\n }\n check(value) { "Check failed." }\n}\n\n/**\n * Throws
an [IllegalStateException] with the result of calling [lazyMessage] if the [value] is false.\n *\n * @sample
samples.misc.Preconditions.failCheckWithLazyMessage\n */\n@kotlin.internal.InlineOnly\npublic inline fun

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check(value: Boolean, lazyMessage: () -> Any): Unit {
 contract {
 returns() implies value
 }
 if (!value) {
 val message = lazyMessage()
 throw IllegalStateException(message.toString())
 }
}

/**
 * Throws an [IllegalStateException] if the [value] is null. Otherwise
 * returns the not null value.
 *
 * @sample samples.misc.Preconditions.failCheckWithLazyMessage
 */
@kotlin.internal.InlineOnly
public inline fun <T : Any> checkNotNull(value: T?): T {
 contract {
 returns() implies (value != null)
 }
 return checkNotNull(value) { "Required value was null." }
}

/**
 * Throws an [IllegalStateException] with the result of calling [lazyMessage] if the [value] is null. Otherwise
 * returns the not null value.
 *
 * @sample samples.misc.Preconditions.failCheckWithLazyMessage
 */
@kotlin.internal.InlineOnly
public inline fun <T : Any> checkNotNull(value: T?, lazyMessage: () -> Any): T {
 contract {
 returns() implies (value != null)
 }
 if (value == null) {
 val message = lazyMessage()
 throw
 IllegalStateException(message.toString())
 } else {
 return value
 }
}

/**
 * Throws an [IllegalStateException] with the given [message].
 *
 * @sample samples.misc.Preconditions.failWithError
 */
@kotlin.internal.InlineOnly
public inline fun error(message: Any): Nothing = throw
IllegalStateException(message.toString())

/**
 * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
 * Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the
 * license/LICENSE.txt file.
 *
 * \package kotlin.collections
 * \n// NOTE: THIS FILE IS AUTO-GENERATED
 * by the GenerateStandardLib.kt
 *
 * See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
 * \nimport kotlin.js.*
 * \nimport
 * primitiveArrayConcat
 * \nimport withType
 * \nimport kotlin.ranges.contains
 * \nimport kotlin.ranges.reversed
 */
/**
 * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds
 * of this array.
 *
 * @sample samples.collections.Collections.Elements.elementAt
 */
@public actual fun <T>
Array<out T>.elementAt(index: Int): T {
 return elementAtOrElse(index) { throw
 IndexOutOfBoundsException("index: $index, size: $size") }
}

/**
 * Returns an element at the given
 * [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.
 *
 * @sample
 * samples.collections.Collections.Elements.elementAt
 */
@public actual fun ByteArray.elementAt(index: Int): Byte
{
 return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }
}

/**
 * Returns an element
 * at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.
 *
 * @sample samples.collections.Collections.Elements.elementAt
 */
@public actual fun
ShortArray.elementAt(index: Int): Short {
 return elementAtOrElse(index) { throw
 IndexOutOfBoundsException("index: $index, size: $size") }
}

/**
 * Returns an element at the given
 * [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.
 *
 * @sample
 * samples.collections.Collections.Elements.elementAt
 */
@public actual fun IntArray.elementAt(index: Int): Int {
 return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }
}

/**
 * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds
 * of this array.
 *
 * @sample samples.collections.Collections.Elements.elementAt
 */
@public actual fun
LongArray.elementAt(index: Int): Long {
 return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }
}

/**
 * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
 * out of bounds of this array.
 *
 * @sample samples.collections.Collections.Elements.elementAt
 */
@public
actual fun FloatArray.elementAt(index: Int): Float {
 return elementAtOrElse(index) { throw
 IndexOutOfBoundsException("index: $index, size: $size") }
}

/**
 * Returns an element at the given
 * [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.
 *
 * @sample
 * samples.collections.Collections.Elements.elementAt
 */
@public actual fun DoubleArray.elementAt(index: Int):
Double {
 return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }
}

/**
 * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
 * out of bounds of this

```

```

array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n * \npublic actual fun
BooleanArray.elementAt(index: Int): Boolean {\n return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, size: $size") }\n}\n\n/**\n * Returns an element at the given
[index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n * \npublic actual fun CharArray.elementAt(index: Int): Char
{\n return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n
}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n * \npublic actual fun <T> Array<out T>.asList():
List<T> {\n return ArrayList<T>(this.unsafeCast<Array<Any?>>())\n}\n\n/**\n * Returns a [List] that wraps the
original array.\n * \n@kotlin.internal.InlineOnly\npublic actual inline fun ByteArray.asList(): List<Byte> {\n
return this.unsafeCast<Array<Byte>>().asList()\n}\n\n/**\n
* Returns a [List] that wraps the original array.\n * \n@kotlin.internal.InlineOnly\npublic actual inline fun
ShortArray.asList(): List<Short> {\n return this.unsafeCast<Array<Short>>().asList()\n}\n\n/**\n * Returns a
[List] that wraps the original array.\n * \n@kotlin.internal.InlineOnly\npublic actual inline fun IntArray.asList():
List<Int> {\n return this.unsafeCast<Array<Int>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original
array.\n * \n@kotlin.internal.InlineOnly\npublic actual inline fun LongArray.asList(): List<Long> {\n return
this.unsafeCast<Array<Long>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
* \n@kotlin.internal.InlineOnly\npublic actual inline fun FloatArray.asList(): List<Float> {\n return
this.unsafeCast<Array<Float>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
* \n@kotlin.internal.InlineOnly\npublic actual inline fun DoubleArray.asList(): List<Double>
{\n return this.unsafeCast<Array<Double>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original
array.\n * \n@kotlin.internal.InlineOnly\npublic actual inline fun BooleanArray.asList(): List<Boolean> {\n return
this.unsafeCast<Array<Boolean>>().asList()\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
* \npublic actual fun CharArray.asList(): List<Char> {\n return object : AbstractList<Char>(), RandomAccess {\n
override val size: Int get() = this@asList.size\n override fun isEmpty(): Boolean = this@asList.isEmpty()\n
override fun contains(element: Char): Boolean = this@asList.contains(element)\n override fun get(index: Int):
Char {\n AbstractList.checkElementIndex(index, size)\n return this@asList[index]\n }\n
override fun indexOf(element: Char): Int {\n @Suppress("USELESS_CAST")\n if ((element as
Any?) !is Char) return -1\n return this@asList.indexOf(element)\n }\n override fun
lastIndexOf(element: Char): Int {\n @Suppress("USELESS_CAST")\n if
((element as Any?) !is Char) return -1\n return this@asList.lastIndexOf(element)\n }\n }\n}\n}\n\n/**\n * Returns `true` if the two specified arrays are *deeply* equal to one another,\n * i.e. contain the same number of the
same elements in the same order.\n * \n * If two corresponding elements are nested arrays, they are also compared
deeply.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n * \n * The elements of
other types are compared for equality with the [equals][Any.equals] function.\n * \n * For floating point numbers it
means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
* \n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual infix fun <T>
Array<out T>.contentDeepEquals(other: Array<out T>): Boolean {\n return
this.contentDeepEquals(other)\n}\n\n/**\n
* Returns `true` if the two specified arrays are *deeply* equal to one another,\n * i.e. contain the same number of
the same elements in the same order.\n * \n * The specified arrays are also considered deeply equal if both are
`null`.\n * \n * If two corresponding elements are nested arrays, they are also compared deeply.\n * \n * If any of arrays
contains itself on any nesting level the behavior is undefined.\n * \n * The elements of other types are compared for
equality with the [equals][Any.equals] function.\n * \n * For floating point numbers it means that `NaN` is equal to itself
and `-0.0` is not equal to `0.0`.\n * \n@SinceKotlin("1.4")\n@library("arrayDeepEquals")\npublic actual infix fun
<T> Array<out T>?.contentDeepEquals(other: Array<out T>?): Boolean {\n definedExternally\n}\n\n/**\n *
Returns a hash code based on the contents of this array as if it is [List].\n * \n * Nested arrays are treated as lists too.\n *
\n * If any of arrays contains itself on any nesting

```



level the behavior is undefined.

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual fun <T> Array<out T>.contentDeepHashCode(): Int {\n return this.contentDeepHashCode()\n}\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level the behavior is undefined.\n
```

```
*\n@SinceKotlin("1.4")\n@library("arrayDeepHashCode")\npublic actual fun <T> Array<out T>?.contentDeepHashCode(): Int {\n definedExternally\n}\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `\"[...]\"` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n
```

```
*\n@SinceKotlin("1.1")\n@kotlin.internal.LowPriorityInOverloadResolution\npublic actual fun <T> Array<out T>.contentDeepToString(): String {\n return this.contentDeepToString()\n}\n/**\n * Returns a string representation of the contents of this array as if it is a [List].\n * Nested arrays are treated as lists too.\n * \n * If any of arrays contains itself on any nesting level that reference\n * is rendered as `\"[...]\"` to prevent recursion.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n
```

```
*\n@SinceKotlin("1.4")\n@library("arrayDeepToString")\npublic actual fun <T> Array<out T>?.contentDeepToString(): String {\n definedExternally\n}\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
```

```
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation\nwarning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun <T>
```

```
Array<out T>.contentEquals(other: Array<out T>): Boolean {\n return this.contentEquals(other)\n}\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
```

```
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation\nwarning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun
```

```
ByteArray.contentEquals(other: ByteArray): Boolean {\n return this.contentEquals(other)\n}\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n
```

```
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation\nwarning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun\nShortArray.contentEquals(other: ShortArray): Boolean {\n return this.contentEquals(other)\n}\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n
```

```
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation\nwarning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince
```

```
= "1.4")\npublic actual infix fun IntArray.contentEquals(other: IntArray): Boolean {\n return this.contentEquals(other)\n}\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n * \n * The elements are compared for equality with the [equals][Any.equals] function.\n * For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n * \n * @sample samples.collections.Arrays.ContentOperations.contentDeepToString\n
```

```
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation\nwarning.")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual infix fun\nLongArray.contentEquals(other: LongArray): Boolean {\n return this.contentEquals(other)\n}\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the
```

same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public actual infix fun FloatArray.contentEquals(other: FloatArray): Boolean {\n return this.contentEquals(other)\n }\n \n /\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public actual infix fun DoubleArray.contentEquals(other: DoubleArray): Boolean {\n return this.contentEquals(other)\n }\n \n /\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")\n @SinceKotlin("1.1")\n @DeprecatedSinceKotlin(hiddenSince = "1.4")\n public actual infix fun BooleanArray.contentEquals(other: BooleanArray): Boolean {\n return this.contentEquals(other)\n }\n \n /\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @SinceKotlin("1.4")\n @library("arrayEquals")\n public actual infix fun <T> Array<out T>?.contentEquals(other: Array<out T>?): Boolean {\n definedExternally\n }\n \n /\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @SinceKotlin("1.4")\n @library("arrayEquals")\n public actual infix fun ByteArray?.contentEquals(other: ByteArray?): Boolean {\n definedExternally\n }\n \n /\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @SinceKotlin("1.4")\n @library("arrayEquals")\n public actual infix fun ShortArray?.contentEquals(other: ShortArray?): Boolean {\n definedExternally\n }\n \n /\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @SinceKotlin("1.4")\n @library("arrayEquals")\n public actual infix fun IntArray?.contentEquals(other: IntArray?): Boolean {\n definedExternally\n }\n \n /\*\*\n \* Returns `true` if the two specified arrays are \*structurally\* equal to one another,\n \* i.e. contain the same number of the same elements in the same order.\n \* \n \* The elements are compared for equality with the [equals][Any.equals] function.\n \* For floating point numbers it means that `NaN` is equal to itself and `-0.0` is not equal to `0.0`.\n \* \n @SinceKotlin("1.4")\n @library("arrayEquals")\n public actual infix fun LongArray?.contentEquals(other:

LongArray?): Boolean {  
definedExternally  
} Returns `true` if the two specified arrays are  
\*structurally\* equal to one another,  
\* i.e. contain the same number of the same elements in the same order.  
\* The elements are compared for equality with the [equals][Any.equals] function.  
For floating point numbers it means that `NaN` is equal to itself and  
`-0.0` is not equal to `0.0`.  
@SinceKotlin("1.4")  
@library("arrayEquals")  
public actual infix fun FloatArray?.contentEquals(other: FloatArray?): Boolean {  
definedExternally  
} Returns `true` if the two specified arrays are  
\*structurally\* equal to one another,  
\* i.e. contain the same number of the same elements in the same order.  
\* The elements are compared for equality with the [equals][Any.equals] function.  
For floating point numbers it means that `NaN` is equal to itself and  
`-0.0` is not equal to `0.0`.  
@SinceKotlin("1.4")  
@library("arrayEquals")  
public actual infix fun DoubleArray?.contentEquals(other: DoubleArray?): Boolean {  
definedExternally  
} Returns `true` if the two specified arrays are  
\*structurally\* equal to one another,  
\* i.e. contain the same number of the same elements in the same order.  
\* The elements are compared for equality with the [equals][Any.equals] function.  
For floating point numbers it means that `NaN` is equal to itself and  
`-0.0` is not equal to `0.0`.  
@SinceKotlin("1.4")  
@library("arrayEquals")  
public actual infix fun BooleanArray?.contentEquals(other: BooleanArray?): Boolean {  
definedExternally  
} Returns `true` if the two specified arrays are  
\*structurally\* equal to one another,  
\* i.e. contain the same number of the same elements in the same order.  
\* The elements are compared for equality with the [equals][Any.equals] function.  
For floating point numbers it means that `NaN` is equal to itself and  
`-0.0` is not equal to `0.0`.  
@SinceKotlin("1.4")  
@library("arrayEquals")  
public actual infix fun CharArray?.contentEquals(other: CharArray?): Boolean {  
definedExternally  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun <T> Array<out T>.contentHashCode(): Int {  
return this.contentHashCode()  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun ByteArray.contentHashCode(): Int {  
return this.contentHashCode()  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun ShortArray.contentHashCode(): Int {  
return this.contentHashCode()  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun IntArray.contentHashCode(): Int {  
return this.contentHashCode()  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun LongArray.contentHashCode(): Int {  
return this.contentHashCode()  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun DoubleArray.contentHashCode(): Int {  
return this.contentHashCode()  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation warning.")  
@SinceKotlin("1.1")  
@DeprecatedSinceKotlin(hiddenSince = "1.4")  
public actual fun BooleanArray.contentHashCode(): Int {  
return this.contentHashCode()  
} Returns a hash code based on the contents of this array as if it is [List].  
@Deprecated("Use Kotlin compiler 1.4 to avoid

```

deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual
fun CharArray.contentHashCode(): Int {\n return this.contentHashCode()\n}\n\n/**\n * Returns a hash code based
on the contents
of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun <T>
Array<out T>.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the
contents of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun
ByteArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents
of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun
ShortArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the
contents of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun
IntArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the contents
of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic
actual fun LongArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on
the contents of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun
FloatArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the
contents of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun
DoubleArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the
contents of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun
BooleanArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a hash code based on the
contents of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@library("arrayHashCode")\npublic actual fun
CharArray?.contentHashCode(): Int {\n definedExternally\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n *\n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated("Use Kotlin compiler 1.4 to
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun <T> Array<out T>.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a
string representation of the contents of the specified array as if it is [List].\n *\n *\n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated("Use Kotlin compiler 1.4 to
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun ByteArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n *\n *\n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic actual fun
ShortArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n *\n *\n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated("Use Kotlin compiler 1.4 to
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun IntArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n *\n *\n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince
= "1.4")\npublic actual fun LongArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is [List].\n *\n *\n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated("Use Kotlin compiler 1.4 to
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic
actual fun FloatArray.contentToString(): String {\n return this.contentToString()\n}\n\n/**\n * Returns a string
representation of the contents of the specified array as if it is [List].\n *\n *\n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n@Deprecated("Use Kotlin compiler 1.4 to

```

avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
actual fun DoubleArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
representation of

the contents of the specified array as if it is [List].\n \* \n \* @sample  
samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@Deprecated("Use Kotlin compiler 1.4 to  
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
actual fun BooleanArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@Deprecated("Use Kotlin compiler 1.4 to  
avoid deprecation warning.\")\n@SinceKotlin("1.1")\n@DeprecatedSinceKotlin(hiddenSince = "1.4")\npublic  
actual fun CharArray.contentToString(): String {\n return this.contentToString()\n}\n\n/\*\*\n \* Returns a string  
representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic  
actual fun <T> Array<out T>?.contentToString(): String {\n definedExternally\n}\n\n/\*\*\n \* Returns a string  
representation of the contents of the specified array as if it is [List].\n \* \n \* @sample  
samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ByteArray?.contentToString(): String  
{\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is  
[List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun ShortArray?.contentToString(): String  
{\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is  
[List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic  
actual fun IntArray?.contentToString(): String {\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation  
of the contents of the specified array as if it is [List].\n \* \n \* @sample  
samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun LongArray?.contentToString(): String  
{\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is  
[List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun FloatArray?.contentToString(): String  
{\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation of the contents of the specified array as if it is  
[List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun DoubleArray?.contentToString():  
String {\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation of the contents of the specified array as  
if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun BooleanArray?.contentToString():  
String {\n definedExternally\n}\n\n/\*\*\n \* Returns a string representation of the contents of the specified array as  
if it is [List].\n \* \n \* @sample samples.collections.Arrays.ContentOperations.contentToString\n \*/\n@SinceKotlin("1.4")\n@library("arrayToString")\npublic actual fun CharArray?.contentToString(): String  
{\n definedExternally\n}\n\n/\*\*\n \* Copies this array or its subrange into the [destination] array and returns that  
array.\n \* \n \* It's allowed to pass the same array in the [destination] and even specify the subrange so that it  
overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \*  
@param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the  
beginning (inclusive) of the subrange to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the  
subrange to copy, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException or  
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex  
> endIndex`. \n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array

starting at the specified [destinationOffset],\n \* or when that index is out of the [destination] array indices range.\n \*  
\n \* @return the [destination] array.\n

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun <T> Array<out T>.copyInto(destination: Array<T>, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): Array<T> {\n arrayCopy(this, destination, destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
```

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun ByteArray.copyInto(destination: ByteArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ByteArray {\n arrayCopy(this.unsafeCast<Array<Byte>>(), destination.unsafeCast<Array<Byte>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
```

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun ShortArray.copyInto(destination: ShortArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): ShortArray {\n arrayCopy(this.unsafeCast<Array<Short>>(), destination.unsafeCast<Array<Short>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
```

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun IntArray.copyInto(destination: IntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): IntArray {\n arrayCopy(this.unsafeCast<Array<Int>>(), destination.unsafeCast<Array<Int>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**\n * Copies this array or its subrange into
```

the [destination] array and returns that array.  
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.  
@param destination the array to copy to.  
@param destinationOffset the position in the [destination] array to copy to, 0 by default.  
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex]

or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],  
or when that index is out of the [destination] array indices range.  
@return the [destination] array.

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun LongArray.copyInto(destination: LongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): LongArray {\n arrayCopy(this.unsafeCast<Array<Long>>(), destination.unsafeCast<Array<Long>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**
```

\* Copies this array or its subrange into the [destination] array and returns that array.  
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.  
@param destination the array to copy to.  
@param destinationOffset the position in the [destination] array to copy to, 0 by default.  
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],  
or when that index is out of the [destination] array indices range.  
@return the [destination] array.

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun FloatArray.copyInto(destination: FloatArray, destinationOffset: Int = 0, startIndex:
```

```
Int = 0, endIndex: Int = size): FloatArray {\n arrayCopy(this.unsafeCast<Array<Float>>(), destination.unsafeCast<Array<Float>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**
```

\* Copies this array or its subrange into the [destination] array and returns that array.  
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.  
@param destination the array to copy to.  
@param destinationOffset the position in the [destination] array to copy to, 0 by default.  
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.  
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.  
@throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.  
@throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],  
or when that index is out of the [destination] array indices range.  
@return the [destination] array.

```
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun DoubleArray.copyInto(destination: DoubleArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): DoubleArray {\n arrayCopy(this.unsafeCast<Array<Double>>(), destination.unsafeCast<Array<Double>>(), destinationOffset, startIndex, endIndex)\n return
```

```
destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range.
@param destination the array to copy to.
@param destinationOffset the position in the [destination] array to copy
```

```
to, 0 by default.
@param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.
@throws
```

```
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
```

array indices or when `startIndex > endIndex`. \n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n \* or when that index is out of the [destination] array indices range. \n \* \n \* @return the [destination] array. \n

```

*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun BooleanArray.copyInto(destination: BooleanArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): BooleanArray {\n
arrayCopy(this.unsafeCast<Array<Boolean>>(), destination.unsafeCast<Array<Boolean>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array. \n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the destination range. \n * \n * @param destination the array to copy to. \n * @param destinationOffset the position in the [destination] array to copy to, 0 by default. \n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default. \n * @param endIndex the end (exclusive) of the subrange to copy, size of this array by default. \n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices range. \n * \n * @return the [destination] array. \n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual inline fun CharArray.copyInto(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size): CharArray {\n arrayCopy(this.unsafeCast<Array<Char>>(), destination.unsafeCast<Array<Char>>(), destinationOffset, startIndex, endIndex)\n return destination\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("ACTUAL_WITHOUT_EXPECT", "NOTHING_TO_INLINE")\npublic actual inline fun <T> Array<out T>.copyOf(): Array<T> {\n return this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun ByteArray.copyOf(): ByteArray {\n return this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun ShortArray.copyOf(): ShortArray {\n return this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun IntArray.copyOf(): IntArray {\n return this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\npublic actual fun LongArray.copyOf(): LongArray {\n return withType("LongArray", this.asDynamic().slice())\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun FloatArray.copyOf(): FloatArray {\n return this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\n@Suppress("NOTHING_TO_INLINE")\npublic actual inline fun DoubleArray.copyOf(): DoubleArray {\n return this.asDynamic().slice()\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\npublic actual fun BooleanArray.copyOf(): BooleanArray {\n return withType("BooleanArray", this.asDynamic().slice())\n}\n\n/**\n * Returns new array which is a copy of the original array. \n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n *\npublic actual fun CharArray.copyOf(): CharArray {\n return withType("CharArray", this.asDynamic().slice())\n}\n\n/**\n * Returns new array which is a copy of

```





of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with null char ('\u0000') values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with null char ('\u0000') values.\n \* \n \* @sample

samples.collections.Arrays.CopyOfOperations.resizedPrimitiveCopyOf\n \*/\npublic actual fun  
CharArray.copyOf(newSize: Int): CharArray {\n require(newSize >= 0) { "Invalid new array size: \$newSize." }\n}\n return withType("CharArray", fillFrom(this, CharArray(newSize)))\n}\n\n/\*\*\n \* Returns new array which is a copy of the original array, resized to the given [newSize].\n \* The copy is either truncated or padded at the end with `null` values if necessary.\n \* \n \* - If [newSize] is less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than the size of the original array, the extra elements in the copy array are filled with `null` values.\n \* \n \* @sample samples.collections.Arrays.CopyOfOperations.resizingCopyOf\n \*/\n@Suppress("ACTUAL\_WITHOUT\_EXPECT")\npublic actual fun <T> Array<out T>.copyOf(newSize: Int): Array<T?> {\n require(newSize >= 0) { "Invalid new array size: \$newSize." }\n return arrayCopyResize(this, newSize, null)\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\n@Suppress("ACTUAL\_WITHOUT\_EXPECT")\npublic actual fun <T> Array<out T>.copyOfRange(fromIndex: Int, toIndex: Int): Array<T> {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic actual fun ByteArray.copyOfRange(fromIndex: Int, toIndex: Int): ByteArray {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic actual fun ShortArray.copyOfRange(fromIndex: Int, toIndex: Int): ShortArray {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic actual fun IntArray.copyOfRange(fromIndex: Int, toIndex: Int): IntArray {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex, toIndex)\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic actual fun LongArray.copyOfRange(fromIndex: Int, toIndex: Int): LongArray {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return withType("LongArray", this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param

toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException  
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws  
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic actual fun  
FloatArray.copyOfRange(fromIndex: Int, toIndex: Int): FloatArray {\n  
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex,  
toIndex)\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \*  
@param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to  
copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the  
size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic  
actual fun DoubleArray.copyOfRange(fromIndex: Int, toIndex: Int): DoubleArray {\n  
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return this.asDynamic().slice(fromIndex,  
toIndex)\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified range of the original array.\n \* \n \*  
@param fromIndex the start of the range (inclusive) to copy.\n \* @param toIndex the end of the range (exclusive) to  
copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the  
size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \*/\npublic  
actual fun BooleanArray.copyOfRange(fromIndex: Int, toIndex: Int): BooleanArray {\n  
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return withType("BooleanArray",  
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/\*\*\n \* Returns a new array which is a copy of the specified  
range of the original array.\n \* \n \* @param fromIndex the start of the range (inclusive) to copy.\n \* @param  
toIndex the end of the range (exclusive) to copy.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is  
less than zero  
or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater  
than [toIndex].\n \*/\npublic actual fun CharArray.copyOfRange(fromIndex: Int, toIndex: Int): CharArray {\n  
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n return withType("CharArray",  
this.asDynamic().slice(fromIndex, toIndex))\n}\n\n/\*\*\n \* Fills this array or its subrange with the specified  
[element] value.\n \* \n \* @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param  
toIndex the end of the range (exclusive) to fill, size of this array by default.\n \* \n \* @throws  
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \*  
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n  
\*/\n\n@SinceKotlin("1.3")\n@Suppress("ACTUAL\_FUNCTION\_WITH\_DEFAULT\_ARGUMENTS")\npublic  
actual fun <T> Array<T>.fill(element: T, fromIndex: Int = 0, toIndex: Int =  
size): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n nativeFill(element, fromIndex,  
toIndex);\n}\n\n/\*\*\n \* Fills this array or its subrange with the specified [element] value.\n \* \n \* @param  
fromIndex the start of the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive)  
to fill, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero  
or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater  
than [toIndex].\n  
\*/\n\n@SinceKotlin("1.3")\n@Suppress("ACTUAL\_FUNCTION\_WITH\_DEFAULT\_ARGUMENTS")\npublic  
actual fun ByteArray.fill(element: Byte, fromIndex: Int = 0, toIndex: Int = size): Unit {\n  
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n nativeFill(element, fromIndex, toIndex);\n}\n\n/\*\*\n \*  
Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of  
the range (inclusive) to fill, 0 by default.\n \* @param toIndex the end of the range (exclusive) to fill, size of this  
array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is  
greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n  
\*/\n\n@SinceKotlin("1.3")\n@Suppress("ACTUAL\_FUNCTION\_WITH\_DEFAULT\_ARGUMENTS")\npublic  
actual fun ShortArray.fill(element: Short, fromIndex: Int = 0, toIndex: Int = size): Unit {\n  
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n nativeFill(element, fromIndex, toIndex);\n}\n\n/\*\*  
Fills this array or its subrange with the specified [element] value.\n \* \n \* @param fromIndex the start of the range

```

(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun IntArray.fill(element: Int, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun LongArray.fill(element: Long, fromIndex:
Int = 0, toIndex: Int = size): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n
nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n * Fills this array or its subrange with the specified [element]
value.\n * \n * @param fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end
of the range (exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun FloatArray.fill(element: Float, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param
fromIndex the start of the range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range
(exclusive) to fill, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less
than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is
greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun DoubleArray.fill(element: Double, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun BooleanArray.fill(element: Boolean, fromIndex: Int = 0, toIndex: Int = size): Unit {\n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n
* Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the range
(inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.3")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun CharArray.fill(element:
Char, fromIndex: Int = 0, toIndex: Int = size): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex,
size)\n nativeFill(element, fromIndex, toIndex);\n}\n\n/**\n * Returns an array containing all elements of the
original array and then the given [element].\n * \n * @param element the element to append.\n * \n * @return
this.asDynamic().concat(arrayOf(element))\n}\n\n\n/**\n * Returns an array containing all elements of the

```

original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun ByteArray.plus(element: Byte): ByteArray {\n return plus(byteArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun ShortArray.plus(element: Short): ShortArray {\n return plus(shortArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun IntArray.plus(element: Int): IntArray {\n return plus(intArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun LongArray.plus(element: Long): LongArray {\n return plus(longArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun FloatArray.plus(element: Float): FloatArray {\n return plus(floatArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun DoubleArray.plus(element: Double): DoubleArray {\n return plus(doubleArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun BooleanArray.plus(element: Boolean): BooleanArray {\n return plus(booleanArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then the given [element].\n \*^@Suppress("NOTHING\_TO\_INLINE")\npublic actual inline operator fun CharArray.plus(element: Char): CharArray {\n return plus(charArrayOf(element))\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@Suppress("ACTUAL\_WITHOUT\_EXPECT")\npublic actual operator fun <T> Array<out T>.plus(elements: Collection<T>): Array<T> {\n return arrayPlusCollection(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun ByteArray.plus(elements: Collection<Byte>): ByteArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun ShortArray.plus(elements: Collection<Short>): ShortArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun IntArray.plus(elements: Collection<Int>): IntArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun LongArray.plus(elements: Collection<Long>): LongArray {\n return arrayPlusCollection(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun FloatArray.plus(elements: Collection<Float>): FloatArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun DoubleArray.plus(elements: Collection<Double>): DoubleArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun BooleanArray.plus(elements: Collection<Boolean>): BooleanArray {\n return arrayPlusCollection(this, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] collection.\n \*^@public actual operator fun CharArray.plus(elements: Collection<Char>): CharArray {\n return fillFromCollection(this.copyOf(size + elements.size), this.size, elements)\n}\n\n/\*\*\n \* Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n \*^@Suppress("ACTUAL\_WITHOUT\_EXPECT")\n



place according to the order specified by the given [comparison] function.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* @param comparison the comparison function (a: T, b: T) -> Int: Unit { \n if (size > 1) \n sortArrayWith(this, comparison)\n } \n \* \n \* Sorts a range in the array in-place.\n \* \n \* The sort is `_stable_`. It means that equal elements preserve their order relative to each other after sorting.\n \* \n \* @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n \* @param toIndex the end of the range (exclusive) to sort, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n \* @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n \* \n \* @sample samples.collections.Arrays.Sorting.sortRangeOfArrayOfComparable\n

```

*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun <T : Comparable<T>> Array<out T>.sort(fromIndex: Int = 0, toIndex: Int = size): Unit { \n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n sortArrayWith(this, fromIndex, toIndex,
naturalOrder())\n } \n * \n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n
* @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ByteArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit { \n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ByteArray>()\n subarray.sort()\n } \n * \n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun ShortArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit { \n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<ShortArray>()\n subarray.sort()\n } \n * \n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun IntArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit { \n
AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n val subarray =
this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<IntArray>()\n subarray.sort()\n } \n * \n * Sorts a
range in the array in-place.\n * \n * @param fromIndex the start of the range (inclusive) to sort, 0 by default.\n *
@param toIndex the end of the range (exclusive) to sort, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n * \n * @sample
samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic

```

```

actual fun LongArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
 AbstractList.checkRangeIndexes(fromIndex,
 toIndex, size)
 sortArrayWith(this.unsafeCast<Array<Long>>(), fromIndex, toIndex,
 naturalOrder())
}

/**
 * Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 * @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun FloatArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
 AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
 val subarray = this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<FloatArray>()
 subarray.sort()
}

/**
 * Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 * @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun DoubleArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
 AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
 val subarray = this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<DoubleArray>()
 subarray.sort()
}

/**
 * Sorts a range in the array in-place.
 * @param fromIndex the start of the range (inclusive) to sort, 0 by default.
 * @param toIndex the end of the range (exclusive) to sort, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 * @sample samples.collections.Arrays.Sorting.sortRangeOfArray
 */
@SinceKotlin("1.4")
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun CharArray.sort(fromIndex: Int = 0, toIndex: Int = size): Unit {
 AbstractList.checkRangeIndexes(fromIndex, toIndex, size)
 val subarray = this.asDynamic().subarray(fromIndex, toIndex).unsafeCast<CharArray>()
 subarray.sort()
}

/**
 * Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun ByteArray.sort(noinline comparison: (a: Byte, b: Byte) -> Int): Unit {
 {
 nativeSort(comparison)
 }
}

/**
 * Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun ShortArray.sort(noinline comparison: (a: Short, b: Short) -> Int): Unit {
 {
 nativeSort(comparison)
 }
}

/**
 * Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun IntArray.sort(noinline comparison: (a: Int, b: Int) -> Int): Unit {
 {
 nativeSort(comparison)
 }
}

/**
 * Sorts the array in-place according to the order specified by the given [comparison] function.
 * @Deprecated("Use other sorting functions from the Standard Library")
 * @DeprecatedSinceKotlin(warningSince = "1.6")
 * @kotlin.internal.InlineOnly
 * public inline fun LongArray.sort(noinline comparison: (a: Long, b: Long) -> Int): Unit {
 {
 nativeSort(comparison)
 }
}

```



```

Library\)\n@DeprecatedSinceKotlin(warningSince = `1.6`)\n@kotlin.internal.InlineOnly\npublic inline fun
FloatArray.sort(noinline comparison: (a: Float, b: Float) -> Int): Unit {\n nativeSort(comparison)\n}\n\n/**\n * Sorts the array in-place according to the order specified by the given [comparison] function.\n *
*\n@Deprecated("Use other sorting functions from the Standard
Library\)\n@DeprecatedSinceKotlin(warningSince = `1.6`)\n@kotlin.internal.InlineOnly\npublic inline fun
DoubleArray.sort(noinline comparison: (a: Double, b: Double) -> Int): Unit {\n
 nativeSort(comparison)\n}\n\n/**\n * Sorts the array in-place according to the order
 specified by the given [comparison] function.\n *
*\n@Deprecated("Use other sorting functions from the Standard
Library\)\n@DeprecatedSinceKotlin(warningSince = `1.6`)\n@kotlin.internal.InlineOnly\npublic inline fun
CharArray.sort(noinline comparison: (a: Char, b: Char) -> Int): Unit {\n nativeSort(comparison)\n}\n\n/**\n *
Sorts the array in-place according to the order specified by the given [comparator].\n * \n * The sort is stable. It
means that equal elements preserve their order relative to each other after sorting.\n *
*\npublic actual fun <T>
Array<out T>.sortWith(comparator: Comparator<in T>): Unit {\n if (size > 1) sortArrayWith(this,
 comparator)\n}\n\n/**\n * Sorts a range in the array in-place with the given [comparator].\n * \n * The sort is
stable. It means that equal elements preserve their order relative to each other after sorting.\n * \n * @param
fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range
(exclusive)
 to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n
*\n@SinceKotlin("1.4")\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic
actual fun <T> Array<out T>.sortWith(comparator: Comparator<in T>, fromIndex: Int = 0, toIndex: Int = size):
Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n sortArrayWith(this, fromIndex, toIndex,
 comparator)\n}\n\n/**\n * Returns a typed object array containing all of the elements of this primitive array.\n
*\npublic actual fun ByteArray.toTypedArray(): Array<Byte> {\n return js("[]").slice.call(this)\n}\n\n/**\n *
Returns a typed object array containing all of the elements of this primitive array.\n *
*\npublic actual fun ShortArray.toTypedArray(): Array<Short> {\n return js("[]").slice.call(this)\n}\n\n/**\n *
Returns a typed object array containing all of the elements of this primitive array.\n *
*\npublic actual fun IntArray.toTypedArray(): Array<Int> {\n return js("[]").slice.call(this)\n}\n\n/**\n * Returns a typed object
array containing all of the elements of this primitive array.\n *
*\npublic actual fun LongArray.toTypedArray():
Array<Long> {\n return js("[]").slice.call(this)\n}\n\n/**\n * Returns a typed object array containing all of the
elements of this primitive array.\n *
*\npublic actual fun FloatArray.toTypedArray(): Array<Float> {\n return
 js("[]").slice.call(this)\n}\n\n/**\n * Returns a typed object array containing all of the elements of this primitive
array.\n *
*\npublic actual fun DoubleArray.toTypedArray(): Array<Double> {\n return
 js("[]").slice.call(this)\n}\n\n/**\n * Returns a typed object array containing all of the elements of this primitive
array.\n *
*\npublic actual fun BooleanArray.toTypedArray(): Array<Boolean> {\n return
 js("[]").slice.call(this)\n}\n\n/**\n * Returns a typed object array containing all of the elements of this primitive
array.\n *
*\npublic actual fun CharArray.toTypedArray(): Array<Char> {\n return Array(size) { index ->
 this[index] }\n}\n\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*\n@file:kotlin.jvm.JvmName("ComparisonsKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage
kotlin.comparisons\n\n/**\n * Compares two values using the specified functions [selectors] to calculate the result
of the comparison.\n * The functions are called sequentially, receive the given values [a] and [b] and return
[Comparable]\n * objects. As soon as the [Comparable] instances returned by a function for [a] and [b] values do
not\n * compare as equal, the result of that comparison is returned.\n * \n * @sample
samples.comparisons.Comparisons.compareValuesByWithSelectors\n

```

```

*

public fun <T> compareValuesBy(a: T, b: T, vararg selectors: (T) -> Comparable<*>?): Int {

 require(selectors.size > 0)

 return compareValuesByImpl(a, b, selectors)

}
private fun <T>

compareValuesByImpl(a: T, b: T, selectors: Array<out (T) -> Comparable<*>?): Int {

 for (fn in selectors) {

 val v1 = fn(a)

 val v2 = fn(b)

 val diff = compareValues(v1, v2)

 if (diff != 0) return diff

 }

 return 0

}
**

* Compares two values using the specified [selector] function to calculate the result of the

comparison.

* The function is applied to the given values [a] and [b] and return [Comparable] objects.

* The

result of comparison of these [Comparable] instances is returned.

*

@sample

samples.comparisons.Comparisons.compareValuesByWithSingleSelector
*

@kotlin.internal.InlineOnly
public

inline fun <T> compareValuesBy(a: T, b: T, selector: (T) -> Comparable<*>?): Int {

 return compareValues(selector(a), selector(b))

}
**

* Compares two values using the specified [selector]

function to calculate the result of the comparison.

* The function is applied to the given values [a] and [b] and

return objects of type K which are then being

* compared with the given [comparator].

*

@sample

samples.comparisons.Comparisons.compareValuesByWithComparator
*

@kotlin.internal.InlineOnly
public

inline fun <T, K> compareValuesBy(a: T, b: T, comparator: Comparator<in K>, selector: (T) -> K): Int {

 return

comparator.compare(selector(a), selector(b))

}
**

/// Not so useful without type inference for receiver of

expression

/// compareValuesWith(v1, v2, compareBy { it.prop1 } thenByDescending { it.prop2 })

**

*

Compares two values using the specified [comparator].

*

@Suppress("NOTHING_TO_INLINE")
public

inline fun <T> compareValuesWith(a: T, b: T, comparator: Comparator<T>): Int = comparator.compare(a,

b)
**

* Compares

two nullable [Comparable] values. Null is considered less than any value.

*

@sample

samples.comparisons.Comparisons.compareValues
*

public fun <T : Comparable<*>> compareValues(a: T?, b:

T?): Int {

 if (a === b) return 0

 if (a == null) return -1

 if (b == null) return 1

}
@Suppress("UNCHECKED_CAST")

return (a as Comparable<Any>).compareTo(b)
}
**

* Creates a

comparator using the sequence of functions to calculate a result of comparison.

* The functions are called

sequentially, receive the given values `a` and `b` and return [Comparable]

* objects. As soon as the [Comparable]

instances returned by a function for `a` and `b` values do not

* compare as equal, the result of that comparison is

returned from the [Comparator].

*

@sample

samples.comparisons.Comparisons.compareByWithSelectors
*

public fun <T> compareBy(vararg selectors: (T) -> Comparable<*>?): Comparator<T> {

 require(selectors.size > 0)

 return Comparator

{ a, b -> compareValuesByImpl(a, b, selectors) }
}
**

* Creates a comparator using the function to

transform value to a [Comparable] instance for comparison.

*

@sample

samples.comparisons.Comparisons.compareByWithSingleSelector
*

@kotlin.internal.InlineOnly
public inline

fun <T> compareBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =

Comparator { a, b ->

compareValuesBy(a, b, selector) }
**

* Creates a comparator using the [selector] function to transform values

being compared and then applying

* the specified [comparator] to compare transformed values.

*

@sample

samples.comparisons.Comparisons.compareByWithComparator
*

@kotlin.internal.InlineOnly
public inline

fun <T, K> compareBy(comparator: Comparator<in K>, crossinline selector: (T) -> K): Comparator<T> =

Comparator { a, b -> compareValuesBy(a, b, comparator, selector) }
**

* Creates a descending comparator

using the function to transform value to a [Comparable]

instance for comparison.

*

@sample

samples.comparisons.Comparisons.compareByDescendingWithSingleSelector
*

@kotlin.internal.InlineOnly
public inline fun <T> compareByDescending(crossinline selector: (T) ->

Comparable<*>?): Comparator<T> =

Comparator { a, b -> compareValuesBy(b, a, selector) }
**

* Creates a descending comparator using the [selector] function to transform values being compared and then

applying

* the specified [comparator] to compare transformed values.

*

Note that an order of [comparator] is

reversed by this wrapper.

*

@sample

samples.comparisons.Comparisons.compareByDescendingWithComparator
*

@kotlin.internal.InlineOnly
public inline fun <T, K> compareByDescending(comparator: Comparator<in K>,

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crossinline selector: (T) -> K): Comparator<T> =\n Comparator { a, b -> compareValuesBy(b, a, comparator,
selector) }\n\n/**\n * Creates a comparator comparing values after the primary comparator defined them equal. It
uses\n * the function
 to transform value to a [Comparable] instance for comparison.\n *\n * @sample
samples.comparisons.Comparisons.thenBy\n *\n @kotlin.internal.InlineOnly\npublic inline fun <T>
Comparator<T>.thenBy(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n Comparator { a, b -
->\n val previousCompare = this@thenBy.compare(a, b)\n if (previousCompare != 0) previousCompare else
compareValuesBy(a, b, selector)\n }\n\n/**\n * Creates a comparator comparing values after the primary
comparator defined them equal. It uses\n * the [selector] function to transform values and then compares them with
the given [comparator].\n *\n * @sample samples.comparisons.Comparisons.thenByWithComparator\n
*\n @kotlin.internal.InlineOnly\npublic inline fun <T, K> Comparator<T>.thenBy(comparator: Comparator<in K>,
crossinline selector: (T) -> K): Comparator<T> =\n Comparator { a, b ->\n val previousCompare =
this@thenBy.compare(a, b)\n if (previousCompare != 0) previousCompare
 else compareValuesBy(a, b, comparator, selector)\n }\n\n/**\n * Creates a descending comparator using the
primary comparator and\n * the function to transform value to a [Comparable] instance for comparison.\n *\n *
@sample samples.comparisons.Comparisons.thenByDescending\n *\n @kotlin.internal.InlineOnly\npublic inline
fun <T> Comparator<T>.thenByDescending(crossinline selector: (T) -> Comparable<*>?): Comparator<T> =\n
 Comparator { a, b ->\n val previousCompare = this@thenByDescending.compare(a, b)\n if
(previousCompare != 0) previousCompare else compareValuesBy(b, a, selector)\n }\n\n/**\n * Creates a
descending comparator comparing values after the primary comparator defined them equal. It uses\n * the [selector]
function to transform values and then compares them with the given [comparator].\n *\n * @sample
samples.comparisons.Comparisons.thenByDescendingWithComparator\n *\n @kotlin.internal.InlineOnly\npublic
inline fun <T, K> Comparator<T>.thenByDescending(comparator:
 Comparator<in K>, crossinline selector: (T) -> K): Comparator<T> =\n Comparator { a, b ->\n val
previousCompare = this@thenByDescending.compare(a, b)\n if (previousCompare != 0) previousCompare else
compareValuesBy(b, a, comparator, selector)\n }\n\n/**\n * Creates a comparator using the primary comparator
and function to calculate a result of comparison.\n *\n * @sample
samples.comparisons.Comparisons.thenComparator\n *\n @kotlin.internal.InlineOnly\npublic inline fun <T>
Comparator<T>.thenComparator(crossinline comparison: (a: T, b: T) -> Int): Comparator<T> =\n Comparator { a,
b ->\n val previousCompare = this@thenComparator.compare(a, b)\n if (previousCompare != 0)
previousCompare else comparison(a, b)\n }\n\n/**\n * Combines this comparator and the given [comparator] such
that the latter is applied only\n * when the former considered values equal.\n *\n * @sample
samples.comparisons.Comparisons.then\n *\n @kotlin.internal.InlineOnly\npublic infix
fun <T> Comparator<T>.then(comparator: Comparator<in T>): Comparator<T> =\n Comparator { a, b ->\n
val previousCompare = this@then.compare(a, b)\n if (previousCompare != 0) previousCompare else
comparator.compare(a, b)\n }\n\n/**\n * Combines this comparator and the given [comparator] such that the latter
is applied only\n * when the former considered values equal.\n *\n * @sample
samples.comparisons.Comparisons.thenDescending\n *\n @kotlin.internal.InlineOnly\npublic infix fun <T>
Comparator<T>.thenDescending(comparator: Comparator<in T>): Comparator<T> =\n Comparator<T> { a, b -
->\n val previousCompare = this@thenDescending.compare(a, b)\n if (previousCompare != 0)
previousCompare else comparator.compare(b, a)\n }\n\n/**\n * Not so useful without type inference for receiver of
expression\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastWithComparator\n
*\n @kotlin.internal.InlineOnly\npublic fun <T : Any> nullsFirst(comparator: Comparator<in T>): Comparator<T?> =\n
 Comparator { a, b ->\n when {\n a === b -> 0\n a == null -> -1\n b == null -> 1\n else ->
comparator.compare(a, b)\n }\n }\n\n/**\n * Provides a comparator of nullable [Comparable] values\n *
considering `null` value less than any other value.\n * Non-null values are compared according to their [natural

```

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order][naturalOrder].\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastComparator\n
*/\n@kotlin.internal.InlineOnly\npublic inline fun <T : Comparable<T>> nullsFirst(): Comparator<T?> =
nullsFirst(naturalOrder())\n\n/**\n * Extends the given [comparator] of non-nullable values to a comparator of
nullable values\n * considering `null` value greater than any other value.\n * Non-null values are compared with the
provided [comparator].\n
*\n * @sample samples.comparisons.Comparisons.nullsFirstLastWithComparator\n */\npublic fun <T : Any>
nullsLast(comparator: Comparator<in T>): Comparator<T?> =\n Comparator { a, b ->\n when {\n a
=== b -> 0\n a == null -> 1\n b == null -> -1\n else -> comparator.compare(a, b)\n }\n }\n\n/**\n * Provides a comparator of nullable [Comparable] values\n * considering `null` value greater than any
other value.\n * Non-null values are compared according to their [natural order][naturalOrder].\n *\n * @sample
samples.comparisons.Comparisons.nullsFirstLastComparator\n */\n@kotlin.internal.InlineOnly\npublic inline fun
<T : Comparable<T>> nullsLast(): Comparator<T?> = nullsLast(naturalOrder())\n\n/**\n * Returns a comparator
that compares [Comparable] objects in natural order.\n *\n * The natural order of a `Comparable` type here means
the order established by its `compareTo` function.\n *\n * @sample
samples.comparisons.Comparisons.naturalOrderComparator\n
*/\npublic fun <T : Comparable<T>> naturalOrder(): Comparator<T> = @Suppress("UNCHECKED_CAST")
(NaturalOrderComparator as Comparator<T>)\n\n/**\n * Returns a comparator that compares [Comparable] objects
in reversed natural order.\n *\n * The natural order of a `Comparable` type here means the order established by its
`compareTo` function.\n *\n * @sample samples.comparisons.Comparisons.nullsFirstLastWithComparator\n
*/\npublic fun <T : Comparable<T>> reverseOrder(): Comparator<T> = @Suppress("UNCHECKED_CAST")
(ReverseOrderComparator as Comparator<T>)\n\n/**\n * Returns a comparator that imposes the reverse ordering
of this comparator.\n *\n * @sample samples.comparisons.Comparisons.reversed\n
*/\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER")\npublic fun <T> Comparator<T>.reversed():
Comparator<T> = when (this) {\n is ReversedComparator -> this.comparator\n NaturalOrderComparator ->
@Suppress("UNCHECKED_CAST") (ReverseOrderComparator
as Comparator<T>)\n ReverseOrderComparator -> @Suppress("UNCHECKED_CAST")
(NaturalOrderComparator as Comparator<T>)\n else -> ReversedComparator(this)\n}\n\nprivate class
ReversedComparator<T>(public val comparator: Comparator<T>) : Comparator<T> {\n override fun compare(a:
T, b: T): Int = comparator.compare(b, a)\n @Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed():
Comparator<T> = comparator\n}\n\nprivate object NaturalOrderComparator : Comparator<Comparable<Any>> {\n
 override fun compare(a: Comparable<Any>, b: Comparable<Any>): Int = a.compareTo(b)\n
@Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed(): Comparator<Comparable<Any>> =
ReverseOrderComparator\n}\n\nprivate object ReverseOrderComparator : Comparator<Comparable<Any>> {\n
 override fun compare(a: Comparable<Any>, b: Comparable<Any>): Int = b.compareTo(a)\n
@Suppress("VIRTUAL_MEMBER_HIDDEN")\n fun reversed(): Comparator<Comparable<Any>> =
NaturalOrderComparator\n}\n\n"/\n * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StandardKt")\npackage kotlin\n\nimport
kotlin.contracts.*\n\n/**\n * An exception is thrown to indicate that a method body remains to be implemented.\n
*/\npublic class NotImplementedError(message: String = "An operation is not implemented.") :
Error(message)\n\n/**\n * Always throws [NotImplementedError] stating that operation is not implemented.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun TODO(): Nothing = throw NotImplementedError()\n\n/**\n *
Always throws [NotImplementedError] stating that operation is not implemented.\n *\n * @param reason a string
explaining why the implementation is missing.\n */\n@kotlin.internal.InlineOnly\npublic inline fun TODO(reason:
String): Nothing = throw NotImplementedError("An
operation is not implemented: $reason")\n\n\n/**\n * Calls the specified function [block] and returns its result.\n
*\n * For detailed usage information see the documentation for [scope]
*/

```

functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).\n

```
*\n@kotlin.internal.InlineOnly\npublic inline fun <R> run(block: () -> R): R {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return block()\n}\n/**\n * Calls the specified function [block] with `this` value as its receiver and returns its result.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#run).\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> T.run(block: T.() -> R): R {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return block()\n}\n/**\n * Calls the specified function [block] with the given [receiver] as its receiver and returns its result.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#with).\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> with(receiver: T, block: T.() -> R): R {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return receiver.block()\n}\n\n/**\n * Calls the specified function [block] with `this` value as its receiver and returns `this` value.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#apply).\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> T.apply(block: T.() -> Unit): T {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n block()\n return this\n}\n\n/**\n * Calls the specified function [block] with `this` value as its argument and returns `this` value.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#also).\n */\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.1")\npublic inline fun <T> T.also(block: (T) -> Unit): T {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n block(this)\n return this\n}\n\n/**\n * Calls the specified function [block] with `this` value as its argument and returns its result.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#let).\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T, R> T.let(block: (T) -> R): R {\n contract {\n callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n }\n return block(this)\n}\n\n/**\n * Returns `this` value if it satisfies the given [predicate] or `null`, if it doesn't.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).\n */\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.1")\npublic inline fun <T> T.takeIf(predicate: (T) -> Boolean): T? {\n contract {\n callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)\n }\n return if (predicate(this)) this else null\n}\n\n/**\n * Returns `this` value if it _does not_ satisfy the given [predicate] or `null`, if it does.\n * For detailed usage information see the documentation for [scope functions](https://kotlinlang.org/docs/reference/scope-functions.html#takeif-and-takeunless).\n */\n@kotlin.internal.InlineOnly\n@SinceKotlin("1.1")\npublic inline fun <T> T.takeUnless(predicate: (T) -> Boolean): T? {\n contract {\n callsInPlace(predicate, InvocationKind.EXACTLY_ONCE)\n }\n return if (!predicate(this)) this else null\n}\n\n/**\n * Executes the given function [action] specified number of [times].\n * A zero-based index of current iteration is passed as a parameter to [action].\n */\n@sample samples.misc.ControlFlow.repeat\n@kotlin.internal.InlineOnly\npublic inline fun repeat(times: Int, action: (Int) -> Unit) {\n contract { callsInPlace(action) }\n for (index in 0 until times) {\n action(index)\n }\n}\n\n/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.comparisons\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\nimport kotlin.js\n\n/**\n * Returns the greater of two values.\n * If values are equal, returns the first one.\n */\n@SinceKotlin("1.1")\npublic actual fun <T : Comparable<T>> maxOf(a: T, b: T): T {\n return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n */\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic
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```

actual inline fun maxOf(a: Byte, b: Byte): Byte {
 return maxOf(a.toInt(), b.toInt()).unsafeCast<Byte>()
}
// Returns the greater of two values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Short, b: Short): Short {
 return maxOf(a.toInt(), b.toInt()).unsafeCast<Short>()
}
// Returns the greater of two values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Int, b: Int): Int {
 return JsMath.max(a, b)
}
// Returns the greater of two values.

@SinceKotlin("1.1")@Suppress("NOTHING_TO_INLINE")
public actual inline fun maxOf(a: Long, b: Long): Long {
 return if (a >= b) a else b
}
// Returns the greater of two values.
// * If either value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Float, b: Float): Float {
 return JsMath.max(a, b)
}
// Returns the greater of two values.
// * If either value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Double, b: Double): Double {
 return JsMath.max(a, b)
}
// Returns the greater of two values.
// * If there are multiple equal maximal values, returns the first of them.

@SinceKotlin("1.1")
public actual fun <T> Comparable<T>> maxOf(a: T, b: T, c: T): T {
 return maxOf(a, maxOf(b, c))
}
// Returns the greater of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Byte, b: Byte, c: Byte): Byte {
 return JsMath.max(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>()
}
// Returns the greater of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Short, b: Short, c: Short): Short {
 return JsMath.max(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Short>()
}
// Returns the greater of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Int, b: Int, c: Int): Int {
 return JsMath.max(a, b, c)
}
// Returns the greater of three values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Long, b: Long, c: Long): Long {
 return maxOf(a, maxOf(b, c))
}
// Returns the greater of three values.
// * If any value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Float, b: Float, c: Float): Float {
 return JsMath.max(a, b, c)
}
// Returns the greater of three values.
// * If any value is NaN, returns NaN.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual inline fun maxOf(a: Double, b: Double, c: Double): Double {
 return JsMath.max(a, b, c)
}
// Returns the greater of the given values.
// * If there are multiple equal maximal values, returns the first of them.

@SinceKotlin("1.4")
public actual fun <T> Comparable<T>> maxOf(a: T, vararg other: T): T {
 var max = a
 for (e in other) max = maxOf(max, e)
 return max
}
// Returns the greater of the given values.

@SinceKotlin("1.4")
public actual fun maxOf(a: Byte, vararg other: Byte): Byte {
 var max = a
 for (e in other) max = maxOf(max, e)
 return max
}
// Returns the greater of the given values.

@SinceKotlin("1.4")
public actual fun maxOf(a: Short, vararg other: Short): Short {
 var max = a
 for (e in other) max = maxOf(max, e)
 return max
}
// Returns the greater of the given values.

@SinceKotlin("1.4")
public actual fun maxOf(a: Int, vararg other: Int): Int {
 var max = a
 for (e in other) max = maxOf(max, e)
 return max
}
// Returns the greater of the given values.

@SinceKotlin("1.4")
public actual fun maxOf(a: Long, vararg other: Long): Long {
 var max = a
 for (e in other) max = maxOf(max, e)
 return max
}
// Returns the greater of the given values.
// * If any value is NaN, returns NaN.

@SinceKotlin("1.4")
public actual fun maxOf(a: Float, vararg other: Float): Float {
 var max = a
 for (e in other) max = maxOf(max, e)
 return max
}
// Returns the greater of the given values.
// * If any value is NaN, returns NaN.

@SinceKotlin("1.4")
public actual fun maxOf(a: Double, vararg other: Double): Double {
 var max = a
 for (e in other) max = maxOf(max, e)
 return max
}
// Returns the smaller of two values.
// * If values are equal, returns the first one.

@SinceKotlin("1.1")
public actual fun <T> Comparable<T>> minOf(a: T, b: T): T {
 return if (a <= b) a else b
}
// Returns the smaller of two values.

@SinceKotlin("1.1")@kotlin.internal.InlineOnly
public actual

```

```

inline fun minOf(a: Byte, b: Byte): Byte {
 return minOf(a.toInt(), b.toInt()).unsafeCast<Byte>()
}
Returns the smaller of two values.

inline fun minOf(a: Short, b: Short): Short {
 return minOf(a.toInt(), b.toInt()).unsafeCast<Short>()
}
Returns the smaller of two values.

inline fun minOf(a: Int, b: Int): Int {
 return JsMath.min(a, b)
}
Returns the smaller of two values.

inline fun minOf(a: Long, b: Long): Long {
 return if (a <= b) a else b
}
Returns the smaller of two values.
If either value is NaN, returns NaN.

inline fun minOf(a: Float, b: Float): Float {
 return JsMath.min(a, b)
}
Returns the smaller of two values.
If either value is NaN, returns NaN.

inline fun minOf(a: Double, b: Double): Double {
 return JsMath.min(a, b)
}
Returns the smaller of three values.
If there are multiple equal minimal values, returns the first of them.

inline fun <T> Comparable<T>>.minOf(a: T, b: T, c: T): T {
 return minOf(a, minOf(b, c))
}
Returns the smaller of three values.

inline fun minOf(a: Byte, b: Byte, c: Byte): Byte {
 return JsMath.min(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Byte>()
}
Returns the smaller of three values.

inline fun minOf(a: Short, b: Short, c: Short): Short {
 return JsMath.min(a.toInt(), b.toInt(), c.toInt()).unsafeCast<Short>()
}
Returns the smaller of three values.

inline fun minOf(a: Int, b: Int, c: Int): Int {
 return JsMath.min(a, b, c)
}
Returns the smaller of three values.

inline fun minOf(a: Long, b: Long, c: Long): Long {
 return minOf(a, minOf(b, c))
}
Returns the smaller of three values.
If any value is NaN, returns NaN.

inline fun minOf(a: Float, b: Float, c: Float): Float {
 return JsMath.min(a, b, c)
}
Returns the smaller of three values.
If any value is NaN, returns NaN.

inline fun minOf(a: Double, b: Double, c: Double): Double {
 return JsMath.min(a, b, c)
}
Returns the smaller of the given values.
If there are multiple equal minimal values, returns the first of them.

inline fun <T> Comparable<T>>.minOf(a: T, vararg other: T): T {
 var min = a
 for (e in other) min = minOf(min, e)
 return min
}
Returns the smaller of the given values.

inline fun minOf(a: Byte, vararg other: Byte): Byte {
 var min = a
 for (e in other) min = minOf(min, e)
 return min
}
Returns the smaller of the given values.

inline fun minOf(a: Short, vararg other: Short): Short {
 var min = a
 for (e in other) min = minOf(min, e)
 return min
}
Returns the smaller of the given values.

inline fun minOf(a: Int, vararg other: Int): Int {
 var min = a
 for (e in other) min = minOf(min, e)
 return min
}
Returns the smaller of the given values.

inline fun minOf(a: Long, vararg other: Long): Long {
 var min = a
 for (e in other) min = minOf(min, e)
 return min
}
Returns the smaller of the given values.
If any value is NaN, returns NaN.

inline fun minOf(a: Float, vararg other: Float): Float {
 var min = a
 for (e in other) min = minOf(min, e)
 return min
}
Returns the smaller of the given values.
If any value is NaN, returns NaN.

inline fun minOf(a: Double, vararg other: Double): Double {
 var min = a
 for (e in other) min = minOf(min, e)
 return min
}
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package kotlin.experimental
import kotlin.jvm.ExperimentalUnsignedTypes
import kotlin.jvm.JvmInline

```

blic

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value class ULong @kotlin.internal.IntrinsicConstEvaluation @PublishedApi internal constructor(@PublishedApi
internal val data: Long) : Comparable<ULong> {\n\n companion object {\n /**\n * A constant holding
the minimum value an instance of ULong can have.\n */\n public const val MIN_VALUE: ULong =
ULong(0)\n\n /**\n * A constant holding the maximum value an instance of ULong can have.\n */\n public const val MAX_VALUE: ULong = ULong(-1)\n\n /**\n * The number of bytes used to represent
an instance of ULong in a binary form.\n */\n public const val SIZE_BYTES: Int = 8\n\n /**\n *
The number of bits used to represent an instance of ULong in a binary form.\n */\n public const val
SIZE_BITS: Int = 64\n }\n\n /**\n * Compares this value with the specified value for order.\n *
Returns zero if this value is equal to the specified other value, a negative number if it's less than other,\n * or a
positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n public inline operator fun
compareTo(other: UByte): Int = this.compareTo(other.toULong())\n\n /**\n * Compares this value with the
specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative number if
it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n
public inline operator fun compareTo(other: UShort): Int = this.compareTo(other.toULong())\n\n /**\n *
Compares this value with the specified value for order.\n * Returns zero if this value is equal to the specified other
value, a negative number if it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n public inline
operator fun compareTo(other: UInt): Int = this.compareTo(other.toULong())\n\n /**\n * Compares this value
with the specified value for order.\n * Returns zero if this value is equal to the specified other value, a negative
number if it's less than other,\n * or a positive number if it's greater than other.\n */\n @kotlin.internal.InlineOnly\n @Suppress(\"OVERRIDE_BY_INLINE\")\n public override inline operator fun
compareTo(other: ULong): Int = ulongCompare(this.data, other.data)\n\n /** Adds the other value to this value.
*/\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UByte): ULong =
this.plus(other.toULong())\n\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n public
inline operator fun plus(other: UShort): ULong = this.plus(other.toULong())\n\n /** Adds the other value to this
value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other: UInt): ULong =
this.plus(other.toULong())\n\n /** Adds the other value to this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun plus(other:
ULong): ULong = ULong(this.data.plus(other.data))\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UByte): ULong =
this.minus(other.toULong())\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: UShort): ULong = this.minus(other.toULong())\n\n /** Subtracts the other
value from this value. */\n @kotlin.internal.InlineOnly\n public inline operator fun minus(other: UInt): ULong =
this.minus(other.toULong())\n\n /** Subtracts the other value from this value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun minus(other: ULong): ULong = ULong(this.data.minus(other.data))\n\n /** Multiplies
this value by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UByte): ULong = this.times(other.toULong())\n\n /** Multiplies this value
by the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: UShort): ULong =
this.times(other.toULong())\n\n /** Multiplies this value by the other value. */\n @kotlin.internal.InlineOnly\n
public inline operator fun times(other: UInt): ULong = this.times(other.toULong())\n\n /** Multiplies this value by
the other value. */\n @kotlin.internal.InlineOnly\n public inline operator fun times(other: ULong): ULong =
ULong(this.data.times(other.data))\n\n /** Divides this value by the other value, truncating the result to an integer
that is closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UByte): ULong =
this.div(other.toULong())\n\n /** Divides this value by the other value, truncating the result to an integer that is
closer to zero. */\n @kotlin.internal.InlineOnly\n public inline operator fun div(other: UShort): ULong = this.div(other.toULong())\n\n /** Divides this value by the
other value, truncating the result to an integer that is closer to zero. */\n @kotlin.internal.InlineOnly\n public
```



```

inline operator fun div(other: UInt): ULong = this.div(other.toULong())\n /** Divides this value by the other
value, truncating the result to an integer that is closer to zero. *\n @kotlin.internal.InlineOnly\n public inline
operator fun div(other: ULong): ULong = ulongDivide(this, other)\n\n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result is always less than the divisor.\n *\n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: UByte): ULong = this.rem(other.toULong())\n
/**\n * Calculates the remainder of truncating division of this value by the other value.\n * \n * The result is
always less than the divisor.\n *\n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: UShort): ULong =
this.rem(other.toULong())\n /**\n * Calculates the remainder of truncating division of this value by the other
value.\n * \n * The result is always less than the divisor.\n *\n @kotlin.internal.InlineOnly\n public
inline operator fun rem(other: UInt): ULong = this.rem(other.toULong())\n /**\n * Calculates the remainder of
truncating division of this value by the other value.\n * \n * The result is always less than the divisor.\n *\n
@kotlin.internal.InlineOnly\n public inline operator fun rem(other: ULong): ULong = ulongRemainder(this,
other)\n\n /**\n * Divides this value by the other value, flooring the result to an integer that is closer to negative
infinity.\n * \n * For unsigned types, the results of flooring division and truncating division are the same.\n
*\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
UByte): ULong = this.floorDiv(other.toULong())\n /**\n * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division
and truncating division are the same.\n *\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
UShort): ULong = this.floorDiv(other.toULong())\n /**\n * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division
and truncating division are the same.\n *\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other:
UInt): ULong = this.floorDiv(other.toULong())\n /**\n * Divides this value by the other value, flooring the
result to an integer that is closer to negative infinity.\n * \n * For unsigned types, the results of flooring division
and truncating division
are the same.\n *\n @kotlin.internal.InlineOnly\n public inline fun floorDiv(other: ULong): ULong =
div(other)\n\n /**\n * Calculates the remainder of flooring division of this value by the other value.\n * \n *
The result is always less than the divisor.\n * \n * For unsigned types, the remainders of flooring division and
truncating division are the same.\n *\n @kotlin.internal.InlineOnly\n public inline fun mod(other: UByte):
UByte = this.mod(other.toULong()).toUByte()\n /**\n * Calculates the remainder of flooring division of this
value by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the
remainders of flooring division and truncating division are the same.\n *\n @kotlin.internal.InlineOnly\n
public inline fun mod(other: UShort): UShort = this.mod(other.toULong()).toUShort()\n /**\n * Calculates the
remainder of flooring division of this value
by the other value.\n * \n * The result is always less than the divisor.\n * \n * For unsigned types, the
remainders of flooring division and truncating division are the same.\n *\n @kotlin.internal.InlineOnly\n
public inline fun mod(other: UInt): UInt = this.mod(other.toULong()).toUInt()\n /**\n * Calculates the
remainder of flooring division of this value by the other value.\n * \n * The result is always less than the
divisor.\n * \n * For unsigned types, the remainders of flooring division and truncating division are the same.\n
*\n @kotlin.internal.InlineOnly\n public inline fun mod(other: ULong): ULong = rem(other)\n\n /**\n *
Returns this value incremented by one.\n * \n * @sample samples.misc.Builtins.inc\n *\n
@kotlin.internal.InlineOnly\n public inline operator fun inc(): ULong = ULong(data.inc())\n\n /**\n * Returns
this value decremented by one.\n * \n * @sample samples.misc.Builtins.dec\n
*\n @kotlin.internal.InlineOnly\n public inline operator fun dec(): ULong = ULong(data.dec())\n\n /**\n
Creates a range from this value to the specified [other] value. *\n @kotlin.internal.InlineOnly\n public inline
operator fun rangeTo(other: ULong): ULongRange = ULongRange(this, other)\n\n /**\n * Creates a range from
this value up to but excluding the specified [other] value.\n * \n * If the [other] value is less than or equal to
`this` value, then the returned range is empty.\n *\n @SinceKotlin("1.7")\n @ExperimentalStdlibApi\n

```

```

@kotlin.internal.InlineOnly\n public inline operator fun rangeUntil(other: ULong): ULongRange = this until
other\n\n /**\n * Shifts this value left by the [bitCount] number of bits.\n *\n * Note that only the six
lowest-order bits of the [bitCount] are used as the shift distance.\n * The shift distance actually used is therefore
always in the range `0..63`.\n */\n
@kotlin.internal.InlineOnly\n public inline infix fun shl(bitCount: Int): ULong = ULong(data shl bitCount)\n\n
/**\n * Shifts this value right by the [bitCount] number of bits, filling the leftmost bits with zeros.\n *\n *
Note that only the six lowest-order bits of the [bitCount] are used as the shift distance.\n * The shift distance
actually used is therefore always in the range `0..63`.\n */\n @kotlin.internal.InlineOnly\n public inline infix
fun shr(bitCount: Int): ULong = ULong(data ushr bitCount)\n\n /** Performs a bitwise AND operation between
the two values. */\n @kotlin.internal.InlineOnly\n public inline infix fun and(other: ULong): ULong =
ULong(this.data and other.data)\n\n /** Performs a bitwise OR operation between the two values. */\n
@kotlin.internal.InlineOnly\n public inline infix fun or(other: ULong): ULong = ULong(this.data or other.data)\n\n
/** Performs a bitwise XOR operation between the two values. */\n @kotlin.internal.InlineOnly\n
public inline infix fun xor(other: ULong): ULong = ULong(this.data xor other.data)\n\n /** Inverts the bits in this
value. */\n @kotlin.internal.InlineOnly\n public inline fun inv(): ULong = ULong(data.inv())\n\n /**\n *
Converts this [ULong] value to [Byte].\n *\n * If this value is less than or equals to [Byte.MAX_VALUE], the
resulting `Byte` value represents\n * the same numerical value as this `ULong`.\n *\n * The resulting `Byte`
value is represented by the least significant 8 bits of this `ULong` value.\n * Note that the resulting `Byte` value
may be negative.\n */\n @kotlin.internal.InlineOnly\n public inline fun toByte(): Byte = data.toByte()\n\n
/**\n * Converts this [ULong] value to [Short].\n *\n * If this value is less than or equals to
[Short.MAX_VALUE], the resulting `Short` value represents\n * the same numerical value as this `ULong`.\n
*\n * The resulting `Short` value is
represented by the least significant 16 bits of this `ULong` value.\n * Note that the resulting `Short` value may be
negative.\n */\n @kotlin.internal.InlineOnly\n public inline fun toShort(): Short = data.toShort()\n\n /**\n *
Converts this [ULong] value to [Int].\n *\n * If this value is less than or equals to [Int.MAX_VALUE], the
resulting `Int` value represents\n * the same numerical value as this `ULong`.\n *\n * The resulting `Int`
value is represented by the least significant 32 bits of this `ULong` value.\n * Note that the resulting `Int` value
may be negative.\n */\n @kotlin.internal.InlineOnly\n public inline fun toInt(): Int = data.toInt()\n\n /**\n *
Converts this [ULong] value to [Long].\n *\n * If this value is less than or equals to [Long.MAX_VALUE], the
resulting `Long` value represents\n * the same numerical value as this `ULong`. Otherwise the result is
negative.\n *\n * The resulting `Long`
value has the same binary representation as this `ULong` value.\n */\n @kotlin.internal.InlineOnly\n public
inline fun toLong(): Long = data\n\n /**\n * Converts this [ULong] value to [UByte].\n *\n * If this value
is less than or equals to [UByte.MAX_VALUE], the resulting `UByte` value represents\n * the same numerical
value as this `ULong`.\n *\n * The resulting `UByte` value is represented by the least significant 8 bits of this
`ULong` value.\n */\n @kotlin.internal.InlineOnly\n public inline fun toUByte(): UByte = data.toUByte()\n\n
/**\n * Converts this [ULong] value to [UShort].\n *\n * If this value is less than or equals to
[UShort.MAX_VALUE], the resulting `UShort` value represents\n * the same numerical value as this `ULong`.\n
*\n * The resulting `UShort` value is represented by the least significant 16 bits of this `ULong` value.\n */\n
@kotlin.internal.InlineOnly\n public inline fun toUShort():
UShort = data.toUShort()\n\n /**\n * Converts this [ULong] value to [UInt].\n *\n * If this value is less than
or equals to [UInt.MAX_VALUE], the resulting `UInt` value represents\n * the same numerical value as this
`ULong`.\n *\n * The resulting `UInt` value is represented by the least significant 32 bits of this `ULong`
value.\n */\n @kotlin.internal.InlineOnly\n public inline fun toUInt(): UInt = data.toUInt()\n\n /** Returns this
value. */\n @kotlin.internal.InlineOnly\n public inline fun toULong(): ULong = this\n\n /**\n * Converts
this [ULong] value to [Float].\n *\n * The resulting value is the closest `Float` to this `ULong` value.\n * In
case when this `ULong` value is exactly between two `Float`s,\n * the one with zero at least significant bit of
mantissa is selected.\n */\n @kotlin.internal.InlineOnly\n public inline fun toFloat(): Float =

```

```

this.toDouble().toFloat())\n /**\n * Converts this
[ULong] value to [Double].\n *\n * The resulting value is the closest `Double` to this `ULong` value.\n * In
case when this `ULong` value is exactly between two `Double`s,\n * the one with zero at least significant bit of
mantissa is selected.\n */\n @kotlin.internal.InlineOnly\n public inline fun toDouble(): Double =
ulongToDouble(data)\n\n public override fun toString(): String = ulongToString(data)\n\n}\n\n**\n * Converts
this [Byte] value to [ULong].\n *\n * If this value is positive, the resulting `ULong` value represents the same
numerical value as this `Byte`.\n *\n * The least significant 8 bits of the resulting `ULong` value are the same as the
bits of this `Byte` value,\n * whereas the most significant 56 bits are filled with the sign bit of this value.\n
\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Byte.toULong(): ULong = ULong(this.toLong())\n\n**\n * Converts this
[Short] value to [ULong].\n *\n * If this value is positive, the resulting `ULong` value represents the same
numerical value as this `Short`.\n *\n * The least significant 16 bits of the resulting `ULong` value are the same as
the bits of this `Short` value,\n * whereas the most significant 48 bits are filled with the sign bit of this value.\n
\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Short.toULong(): ULong = ULong(this.toLong())\n\n**\n * Converts this [Int] value to [ULong].\n
*\n * If this value is positive, the resulting `ULong` value represents the same numerical value as this `Int`.\n *\n *
The least significant 32 bits of the resulting `ULong` value are the same as the bits of this `Int` value,\n * whereas
the most significant 32 bits are filled with the sign bit of this value.\n
\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline
fun Int.toULong(): ULong = ULong(this.toLong())\n\n**\n * Converts this [Long] value to [ULong].\n *\n * If this
value is positive, the resulting `ULong` value represents the same numerical value as this `Long`.\n *\n * The
resulting `ULong` value has the same binary representation as this `Long` value.\n
\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Long.toULong(): ULong = ULong(this)\n\n**\n * Converts this [Float] value to [ULong].\n *\n *
The fractional part, if any, is rounded down towards zero.\n * Returns zero if this `Float` value is negative or `NaN`,
[ULong.MAX_VALUE] if it's bigger than `ULong.MAX_VALUE`.\n
\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Float.toULong(): ULong = doubleToULong(this.toDouble())\n\n**\n * Converts this [Double]
value to [ULong].\n *\n * The fractional part, if any, is rounded down towards
zero.\n * Returns zero if this `Double` value is negative or `NaN`, [ULong.MAX_VALUE] if it's bigger than
`ULong.MAX_VALUE`.\n
\n\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalUnsignedTypes::class)\n @kotlin.internal.InlineOnly\n
public inline fun Double.toULong(): ULong = doubleToULong(this)\n","/*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n
\n\n @file:kotlin.jvm.JvmMultifileClass\n @file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n**\n * Returns 1st *element* from the list.\n * \n *\n *
Throws an [IndexOutOfBoundsException] if the size of this list is less
than 1.\n *\n*\n @kotlin.internal.InlineOnly\n\npublic inline operator fun <T> List<T>.component1(): T {\n return
get(0)\n}\n\n**\n * Returns 2nd *element* from the list.\n * \n *\n * Throws an [IndexOutOfBoundsException] if the
size of this list is less than 2.\n *\n*\n @kotlin.internal.InlineOnly\n\npublic inline operator fun <T>
List<T>.component2(): T {\n return get(1)\n}\n\n**\n * Returns 3rd *element* from the list.\n * \n *\n * Throws an
[IndexOutOfBoundsException] if the size of this list is less than 3.\n *\n*\n @kotlin.internal.InlineOnly\n\npublic inline
operator fun <T> List<T>.component3(): T {\n return get(2)\n}\n\n**\n * Returns 4th *element* from the list.\n
*\n * \n *\n * Throws an [IndexOutOfBoundsException] if the size of this list is less than 4.\n

```

```

*

@kotlin.internal.InlineOnly

public inline operator fun <T> List<T>.component4(): T {

 return

 get(3)

}

* Returns 5th *element* from the list.

* Throws an [IndexOutOfBoundsException] if the

size of this list is less

than 5.

*

@kotlin.internal.InlineOnly

public inline operator fun <T> List<T>.component5(): T {

 return

 get(4)

}

* Returns `true` if [element] is found in the collection.

*

@kotlin.internal.InlineOnly

public operator fun

<@kotlin.internal.OnlyInputTypes T> Iterable<T>.contains(element: T): Boolean {

 if (this is Collection)

 return contains(element)

 return indexOf(element) >= 0

}

* Returns an element at the given [index] or

throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this collection.

*

@sample

samples.collections.Collections.Elements.elementAt

*

@kotlin.internal.InlineOnly

public fun <T> Iterable<T>.elementAt(index: Int): T {

 if (this is List)

 return get(index)

 return elementAtOrElse(index) { throw

 IndexOutOfBoundsException("Collection doesn't contain element at index $index.")

}

* Returns an

element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this list.

*

@sample

samples.collections.Collections.Elements.elementAt

*

@kotlin.internal.InlineOnly

public inline fun <T>

List<T>.elementAt(index: Int): T {

 return get(index)

}

* Returns an element at the given [index] or

the result of calling the [defaultValue] function if the [index] is out of bounds of this collection.

*

@sample

samples.collections.Collections.Elements.elementAtOrElse

*

@kotlin.internal.InlineOnly

public fun <T>

Iterable<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {

 if (this is List)

 return

 this.getOrElse(index, defaultValue)

 if (index < 0)

 return defaultValue(index)

 val iterator = iterator()

 var count = 0

 while (iterator.hasNext()) {

 val element = iterator.next()

 if (index == count++)

 return element

 }

 return defaultValue(index)

}

* Returns an element at the given [index] or the

result of calling the [defaultValue] function if the [index] is out of bounds of this list.

*

@sample

samples.collections.Collections.Elements.elementAtOrElse

*

@kotlin.internal.InlineOnly

public inline fun <T> List<T>.elementAtOrElse(index: Int, defaultValue: (Int) ->

T): T {

 return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)

}

* Returns

an element at the given [index] or `null` if the [index] is out of bounds of this collection.

*

@sample

samples.collections.Collections.Elements.elementAtOrNull

*

@kotlin.internal.InlineOnly

public fun <T>

Iterable<T>.elementAtOrNull(index: Int): T? {

 if (this is List)

 return this.getOrNull(index)

 if (index <

 0)

 return null

 val iterator = iterator()

 var count = 0

 while (iterator.hasNext()) {

 val element =

 iterator.next()

 if (index == count++)

 return element

 }

 return null

}

* Returns an

element at the given [index] or `null` if the [index] is out of bounds of this list.

*

@sample

samples.collections.Collections.Elements.elementAtOrNull

*

@kotlin.internal.InlineOnly

public inline fun <T> List<T>.elementAtOrNull(index: Int): T? {

 return

 this.getOrNull(index)

}

* Returns the first element matching the given [predicate], or `null` if no such

element was found.

*

@sample

samples.collections.Collections.Elements.find

*

@kotlin.internal.InlineOnly

public inline fun <T> Iterable<T>.find(predicate: (T) -> Boolean): T? {

 return

 firstOrNull(predicate)

}

* Returns the last element matching the given [predicate], or `null` if no such

element was found.

*

@sample

samples.collections.Collections.Elements.find

*

@kotlin.internal.InlineOnly

public inline fun <T> Iterable<T>.findLast(predicate: (T) -> Boolean): T? {

 return

 lastOrNull(predicate)

}

* Returns the last element matching the given [predicate], or `null` if no

such element was found.

*

@sample

samples.collections.Collections.Elements.find

*

@kotlin.internal.InlineOnly

public

inline fun <T> List<T>.findLast(predicate: (T) -> Boolean): T? {

 return lastOrNull(predicate)

}

* Returns the first element.

*

@throws NoSuchElementException if the collection is empty.

*

@kotlin.internal.InlineOnly

public fun

<T> Iterable<T>.first(): T {

 when (this) {

 is List -> return this.first()

 else -> {

 val iterator =

 iterator()

 if (!iterator.hasNext())

 throw NoSuchElementException("Collection is empty.")

 return iterator.next()

 }

 }

}

* Returns the first element.

*

@throws

NoSuchElementException if the list is empty.

*

@kotlin.internal.InlineOnly

public fun <T> List<T>.first(): T {

 if (isEmpty())


```

```

throw NoSuchElementException("List is empty.")\n return this[0]\n}\n\n/**\n * Returns the first element
matching the given [predicate].\n * @throws [NoSuchElementException] if no such element is found.\n */\npublic
inline fun <T> Iterable<T>.first(predicate: (T) -> Boolean):
T {\n for (element in this) if (predicate(element)) return element\n throw
NoSuchElementException("Collection contains no element matching the predicate.")\n}\n\n/**\n * Returns the
first non-null value produced by [transform] function being applied to elements of this collection in iteration order,\n
* or throws [NoSuchElementException] if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Iterable<T>.firstNotNullOf(transform: (T) -> R?): R {\n return firstNotNullOfOrNull(transform) ?: throw
NoSuchElementException("No element of the collection was transformed to a non-null value.")\n}\n\n/**\n * Returns the first non-null value produced by [transform] function being applied to elements of this collection in
iteration order,\n * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*/\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Any>
Iterable<T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {\n for (element in this) {\n val result =
transform(element)\n if (result != null) {\n return result\n }\n }\n return null\n}\n\n/**\n * Returns the first element, or `null` if the collection is empty.\n */\npublic fun <T> Iterable<T>.firstOrNull(): T? {\n
when (this) {\n is List -> {\n if (isEmpty())\n return null\n else\n return this[0]\n }\n else -> {\n val iterator = iterator()\n if (!iterator.hasNext())\n return null\n return iterator.next()\n }\n}\n}\n\n/**\n * Returns the first element, or `null` if the list is empty.\n */\npublic
fun <T> List<T>.firstOrNull(): T? {\n return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns
the first element matching the given [predicate], or `null` if element was not found.\n */\npublic inline fun <T>
Iterable<T>.firstOrNull(predicate: (T) -> Boolean): T? {\n for (element in this) if (predicate(element)) return
element\n return null\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the
[defaultValue] function if the [index] is out of bounds of this list.\n */\n@kotlin.internal.InlineOnly\npublic inline
fun <T> List<T>.getOrNull(index: Int, default: (Int) -> T): T {\n return if (index >= 0 && index <=
lastIndex) get(index) else default(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the
[index] is out of bounds of this list.\n * \n * @sample samples.collections.Elements.getOrNull\n
*/\npublic fun <T> List<T>.getOrNull(index: Int): T? {\n return if (index >= 0 && index <= lastIndex) get(index)
else null\n}\n\n/**\n * Returns first index of [element], or -1 if the collection does
not contain element.\n */\npublic fun <@kotlin.internal.OnlyInputTypes T> Iterable<T>.indexOf(element: T): Int
{\n if (this is List) return this.indexOf(element)\n var index = 0\n for (item in this) {\n
checkIndexOverflow(index)\n if (element == item)\n return index\n index++\n }\n return -
1\n}\n\n/**\n * Returns first index of [element], or -1 if the list does not contain element.\n
*/\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases\npublic fun <@kotlin.internal.OnlyInputTypes T> List<T>.indexOf(element: T): Int {\n return
indexOf(element)\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
collection does not contain such element.\n */\npublic inline fun <T> Iterable<T>.indexOfFirst(predicate: (T) ->
Boolean): Int {\n var index = 0\n for (item in this) {\n checkIndexOverflow(index)\n if
(predicate(item))\n return index\n index++\n }\n return -1\n}\n\n/**\n * Returns index of the first element matching the given
[predicate], or -1 if the list does not contain such element.\n */\npublic inline fun <T>
List<T>.indexOfFirst(predicate: (T) -> Boolean): Int {\n var index = 0\n for (item in this) {\n if
(predicate(item))\n return index\n index++\n }\n return -1\n}\n\n/**\n * Returns index of the last
element matching the given [predicate], or -1 if the collection does not contain such element.\n */\npublic inline fun
<T> Iterable<T>.indexOfLast(predicate: (T) -> Boolean): Int {\n var lastIndex = -1\n var index = 0\n for (item
in this) {\n checkIndexOverflow(index)\n if (predicate(item))\n lastIndex = index\n index++\n
}

```

```

}n return lastIndex\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the list
does not contain such element.\n */\npublic inline fun <T> List<T>.indexOfLast(predicate:
(T) -> Boolean): Int {\n val iterator = this.listIterator(size)\n while (iterator.hasPrevious()) {\n if
(predicate(iterator.previous())) {\n return iterator.nextIndex()\n }\n }\n return -1\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the collection is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> Iterable<T>.last(): T {\n when (this) {\n is
List -> return this.last()\n else -> {\n val iterator = iterator()\n if (!iterator.hasNext())\n throw NoSuchElementException("Collection is empty.")\n var last = iterator.next()\n while
(iterator.hasNext())\n last = iterator.next()\n return last\n }\n }\n}\n\n/**\n * Returns the last
element.\n * \n * @throws NoSuchElementException if the list is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> List<T>.last(): T {\n if (isEmpty())\n throw NoSuchElementException("List is
empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n *
@throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T> Iterable<T>.last(predicate: (T) ->
Boolean): T {\n var last: T? = null\n var found = false\n for (element in this) {\n if (predicate(element))
{\n last = element\n found = true\n }\n }\n if (!found) throw
NoSuchElementException("Collection contains no element matching the predicate.")\n
@Suppress("UNCHECKED_CAST")\n return last as T\n}\n\n/**\n * Returns the last element matching the
given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T> List<T>.last(predicate: (T) -> Boolean): T {\n val iterator = this.listIterator(size)\n
while (iterator.hasPrevious()) {\n val element = iterator.previous()\n if (predicate(element)) return
element\n }\n throw NoSuchElementException("List contains no element matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the collection does not contain element.\n */\npublic fun
<@kotlin.internal.OnlyInputTypes T> Iterable<T>.lastIndexOf(element: T): Int {\n if (this is List) return
this.lastIndexOf(element)\n var lastIndex = -1\n var index = 0\n for (item in this) {\n
checkIndexOverflow(index)\n if (element == item)\n lastIndex = index\n index++\n }\n return
lastIndex\n}\n\n/**\n * Returns last index of [element], or -1 if the list does not contain element.\n */\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false warning, extension takes precedence in
some cases\npublic
fun <@kotlin.internal.OnlyInputTypes T> List<T>.lastIndexOf(element: T): Int {\n return
lastIndexOf(element)\n}\n\n/**\n * Returns the last element, or `null` if the collection is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic fun <T> Iterable<T>.lastOrNull(): T? {\n when (this)
{\n is List -> return if (isEmpty()) null else this[size - 1]\n else -> {\n val iterator = iterator()\n
if (!iterator.hasNext())\n return null\n var last = iterator.next()\n while (iterator.hasNext())\n
last = iterator.next()\n return last\n }\n }\n}\n\n/**\n * Returns the last element, or `null` if the
list is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic fun <T>
List<T>.lastOrNull(): T? {\n return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element
matching the given [predicate], or `null`
if no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n */\npublic inline
fun <T> Iterable<T>.lastOrNull(predicate: (T) -> Boolean): T? {\n var last: T? = null\n for (element in this) {\n
if (predicate(element)) {\n last = element\n }\n }\n return last\n}\n\n/**\n * Returns the last
element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n */\npublic inline fun <T> List<T>.lastOrNull(predicate: (T) ->
Boolean): T? {\n val iterator = this.listIterator(size)\n while (iterator.hasPrevious()) {\n val element =
iterator.previous()\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns a random
element from this collection.\n * \n * @throws NoSuchElementException if this collection is empty.\n */

```

```

*^@SinceKotlin("1.3")^@kotlin.internal.InlineOnly^public inline fun <T> Collection<T>.random():
 T {^n return random(Random)^n}^n/^n/**^n * Returns a random element from this collection using the specified
source of randomness.^n * ^n * @throws NoSuchElementException if this collection is empty.^n
*^@SinceKotlin("1.3")^public fun <T> Collection<T>.random(random: Random): T {^n if (isEmpty())^n
throw NoSuchElementException("Collection is empty.")^n return elementAt(random.nextInt(size))^n}^n/^n/**^n *
Returns a random element from this collection, or `null` if this collection is empty.^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^public
inline fun <T> Collection<T>.randomOrNull(): T? {^n return randomOrNull(Random)^n}^n/^n/**^n * Returns a
random element from this collection using the specified source of randomness, or `null` if this collection is empty.^n
*^@SinceKotlin("1.4")^@WasExperimental(ExperimentalStdlibApi::class)^public fun <T>
Collection<T>.randomOrNull(random: Random):
 T? {^n if (isEmpty())^n return null^n return elementAt(random.nextInt(size))^n}^n/^n/**^n * Returns the
single element, or throws an exception if the collection is empty or has more than one element.^n
*^public fun <T>
Iterable<T>.single(): T {^n when (this) {^n is List -> return this.single()^n else -> {^n val iterator =
iterator()^n if (!iterator.hasNext())^n throw NoSuchElementException("Collection is empty.")^n
 val single = iterator.next()^n if (iterator.hasNext())^n throw
IllegalArgumentException("Collection has more than one element.")^n return single^n }^n
}^n}^n/^n/**^n * Returns the single element, or throws an exception if the list is empty or has more than one
element.^n
*^public fun <T> List<T>.single(): T {^n return when (size) {^n 0 -> throw
NoSuchElementException("List is empty.")^n 1 -> this[0]^n else -> throw
IllegalArgumentException("List has more than one element.")^n }^n}^n/^n/**^n * Returns the single element
matching the given [predicate], or throws exception if there is no or more than one matching element.^n
*^public
inline fun <T> Iterable<T>.single(predicate: (T) -> Boolean): T {^n var single: T? = null^n var found = false^n
for (element in this) {^n if (predicate(element)) {^n if (found) throw
IllegalArgumentException("Collection contains more than one matching element.")^n single = element^n
 found = true^n }^n }^n if (!found) throw NoSuchElementException("Collection contains no element
matching the predicate.")^n @Suppress("UNCHECKED_CAST")^n return single as T^n}^n/^n/**^n * Returns
single element, or `null` if the collection is empty or has more than one element.^n
*^public fun <T>
Iterable<T>.singleOrNull(): T? {^n when (this) {^n is List -> return if (size == 1) this[0] else null^n
 else -> {^n val iterator = iterator()^n if (!iterator.hasNext())^n return null^n
 val single
= iterator.next()^n if (iterator.hasNext())^n return null^n return single^n }^n
}^n}^n/^n/**^n * Returns single element, or `null` if the list is empty or has more than one element.^n
*^public fun
<T> List<T>.singleOrNull(): T? {^n return if (size == 1) this[0] else null^n}^n/^n/**^n * Returns the single element
matching the given [predicate], or `null` if element was not found or more than one element was found.^n
*^public
inline fun <T> Iterable<T>.singleOrNull(predicate: (T) -> Boolean): T? {^n var single: T? = null^n var found =
false^n for (element in this) {^n if (predicate(element)) {^n if (found) return null^n single =
element^n found = true^n }^n }^n if (!found) return null^n return single^n}^n/^n/**^n * Returns a list
containing
all elements except first [n] elements.^n
* ^n * @throws IllegalArgumentException if [n] is negative.^n
* ^n *
@sample samples.collections.Collections.Transformations.drop^n
*^public fun <T> Iterable<T>.drop(n: Int):
List<T> {^n require(n >= 0) { "Requested element count $n is less than zero." }^n if (n == 0) return toList()^n
val list: ArrayList<T>^n if (this is Collection<*>) {^n val resultSize = size - n^n if (resultSize <= 0)^n
return emptyList()^n if (resultSize == 1)^n return listOf(last())^n list = ArrayList<T>(resultSize)^n
if (this is List<T>) {^n if (this is RandomAccess) {^n for (index in n until size)^n
list.add(this[index])^n } else {^n for (item in listIterator(n))^n list.add(item)^n }^n
return list^n }^n }^n else {^n list = ArrayList<T>()^n }^n var count =
0^n for (item in this) {^n if (count >= n) list.add(item) else ++count^n }^n return
list.optimizeReadOnlyList()^n}^n/^n/**^n * Returns a list containing all elements except last [n] elements.^n
* ^n *

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@throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic fun <T> List<T>.dropLast(n: Int): List<T> {\n
require(n >= 0) {\n"Requested element count $n is less than zero.\n" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n *\npublic inline fun <T>
List<T>.dropLastWhile(predicate: (T) -> Boolean): List<T> {\n if (!isEmpty()) {\n val iterator =
listIterator(size)\n while (iterator.hasPrevious()) {\n if (!predicate(iterator.previous())) {\n return
take(iterator.nextIndex() + 1)\n
}\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except first
elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n *\npublic inline fun <T> Iterable<T>.dropWhile(predicate:
(T) -> Boolean): List<T> {\n var yielding = false\n val list = ArrayList<T>()\n for (item in this)\n if
(yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n
}\n return list\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n *
@sample samples.collections.Collections.Filtering.filter\n *\npublic inline fun <T> Iterable<T>.filter(predicate: (T)
-> Boolean): List<T> {\n return filterTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * @param [predicate] function that takes the
index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n *
@sample samples.collections.Collections.Filtering.filterIndexed\n *\npublic inline fun <T>
Iterable<T>.filterIndexed(predicate: (index: Int, T) -> Boolean): List<T> {\n return
filterIndexedTo(ArrayList<T>(), predicate)\n}\n\n/**\n * Appends all elements matching the given [predicate] to
the given [destination].\n * @param [predicate] function that takes the index of an element and the element itself\n *
and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n *\npublic inline fun <T, C : MutableCollection<in T>>
Iterable<T>.filterIndexedTo(destination: C, predicate: (index: Int, T) -> Boolean): C {\n forEachIndexed { index,
element ->\n if (predicate(index, element)) destination.add(element)\n }\n return destination\n}\n\n/**\n *
Returns a list containing all elements
that are instances of specified type parameter R.\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstance\n *\npublic inline fun <reified R>
Iterable<*>.filterIsInstance(): List<@kotlin.internal.NoInfer R> {\n return
filterIsInstanceTo(ArrayList<R>())\n}\n\n/**\n * Appends all elements that are instances of specified type
parameter R to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterIsInstanceTo\n *\npublic inline fun <reified R, C :
MutableCollection<in R>> Iterable<*>.filterIsInstanceTo(destination: C): C {\n for (element in this) if (element is
R) destination.add(element)\n return destination\n}\n\n/**\n * Returns a list containing all elements not matching
the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n *\npublic inline fun <T>
Iterable<T>.filterNot(predicate: (T) -> Boolean): List<T> {\n return filterNotTo(ArrayList<T>(),
predicate)\n}\n\n/**\n * Returns a list
containing all elements that are not `null`.\n * \n * @sample
samples.collections.Collections.Filtering.filterNotNull\n *\npublic fun <T : Any> Iterable<T?>.filterNotNull():
List<T> {\n return filterNotNullTo(ArrayList<T>())\n}\n\n/**\n * Appends all elements that are not `null` to the
given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterNotNullTo\n *\npublic fun <C
: MutableCollection<in T>, T : Any> Iterable<T?>.filterNotNullTo(destination: C): C {\n for (element in this) if
(element != null) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not matching
the given [predicate] to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\npublic inline fun <T, C : MutableCollection<in T>> Iterable<T>.filterNotTo(destination: C, predicate: (T) ->
Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return
destination\n}\n\n/**\n

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* Appends all elements matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n *^\npublic inline fun <T, C : MutableCollection<in T>>
Iterable<T>.filterTo(destination: C, predicate: (T) -> Boolean): C {\n for (element in this) if (predicate(element))
destination.add(element)\n return destination\n}\n\n/**\n * Returns a list containing elements at indices in the
specified [indices] range.\n *^\npublic fun <T> List<T>.slice(indices: IntRange): List<T> {\n if
(indices.isEmpty()) return listOf()\n return this.subList(indices.start, indices.endInclusive + 1).toList()\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n *^\npublic fun <T> List<T>.slice(indices:
Iterable<Int>): List<T> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list = ArrayList<T>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return
list\n}\n\n/**\n * Returns a list containing first [n] elements.\n * \n * @throws IllegalArgumentException if [n] is
negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n *^\npublic fun <T>
Iterable<T>.take(n: Int): List<T> {\n require(n >= 0) { "Requested element count $n is less than zero." }\n if (n
== 0) return emptyList()\n if (this is Collection<T>) {\n if (n >= size) return toList()\n if (n == 1) return
listOf(first())\n }\n var count = 0\n val list = ArrayList<T>(n)\n for (item in this) {\n list.add(item)\n if (++count == n)\n break\n }\n return list.optimizeReadOnlyList()\n}\n\n/**\n * Returns a list containing
last [n] elements.\n * \n * @throws IllegalArgumentException if [n] is negative.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun <T> List<T>.takeLast(n: Int): List<T> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n if (n == 0) return emptyList()\n val size = size\n if (n >= size) return toList()\n if (n == 1) return
listOf(last())\n val list = ArrayList<T>(n)\n if (this is RandomAccess) {\n for (index in size - n until size)\n list.add(this[index])\n } else {\n for (item in listIterator(size - n))\n list.add(item)\n }\n return
list\n}\n\n/**\n * Returns a list containing last elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic inline fun <T> List<T>.takeLastWhile(predicate:
(T) -> Boolean): List<T> {\n if (isEmpty())\n return emptyList()\n val iterator = listIterator(size)\n while
(iterator.hasPrevious()) {\n if (!predicate(iterator.previous())) {\n iterator.next()\n val
expectedSize = size - iterator.nextIndex()\n if (expectedSize == 0) return emptyList()\n return
ArrayList<T>(expectedSize).apply\n {\n while (iterator.hasNext())\n add(iterator.next())\n }\n }\n }\n return
toList()\n}\n\n/**\n * Returns a list containing first elements satisfying the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic inline fun <T> Iterable<T>.takeWhile(predicate:
(T) -> Boolean): List<T> {\n val list = ArrayList<T>()\n for (item in this) {\n if (!predicate(item))\n break\n list.add(item)\n }\n return list\n}\n\n/**\n * Reverses elements in the list in-place.\n *^\npublic
expect fun <T> MutableList<T>.reverse(): Unit\n\n/**\n * Returns a list with elements in reversed order.\n *^\npublic
fun <T> Iterable<T>.reversed(): List<T> {\n if (this is Collection && size <= 1) return toList()\n val
list = toMutableList()\n list.reverse()\n return list\n}\n\n/**\n * Randomly shuffles elements in this list in-place
using the specified [random]
instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n *^\n@SinceKotlin("1.3")\npublic fun <T> MutableList<T>.shuffle(random: Random): Unit {\n for (i in lastIndex
downTo 1) {\n val j = random.nextInt(i + 1)\n this[j] = this.set(i, this[j])\n }\n}\n\n/**\n * Sorts elements
in the list in-place according to natural sort order of the value returned by specified [selector] function.\n * \n * The
sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n *^\npublic
inline fun <T, R : Comparable<R>> MutableList<T>.sortBy(crossinline selector: (T) -> R?): Unit {\n if (size > 1)
sortWith(compareBy(selector))\n}\n\n/**\n * Sorts elements in the list in-place descending according to natural sort
order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal
elements preserve their order relative
to each other after sorting.\n *^\npublic inline fun <T, R : Comparable<R>>
MutableList<T>.sortByDescending(crossinline selector: (T) -> R?): Unit {\n if (size > 1)

```



\* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original collection.\n \* \n \* @sample

```

samples.collections.Collections.Transformations.associate\n *
\npublic inline fun <T, K, V>
Iterable<T>.associate(transform: (T) -> Pair<K, V>): Map<K, V> {
\n val capacity =
mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)\n return associateTo(LinkedHashMap<K,
V>(capacity), transform)\n}
\n\n/**
\n * Returns a [Map] containing the elements from the given collection indexed
by the key\n * returned from [keySelector] function applied to
each element.\n * \n * If any two elements would have the same key returned by [keySelector] the last one gets
added to the map.\n * \n * The returned map preserves the entry iteration order of the original collection.\n * \n *
\n * @sample
samples.collections.Collections.Transformations.associateBy\n *
\npublic inline fun <T, K>
Iterable<T>.associateBy(keySelector: (T) -> K): Map<K, T> {
\n val capacity =
mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)\n return associateByTo(LinkedHashMap<K,
T>(capacity), keySelector)\n}
\n\n/**
\n * Returns a [Map] containing the values provided by [valueTransform] and
indexed by [keySelector] functions applied to elements of the given collection.\n * \n * If any two elements would
have the same key returned by [keySelector] the last one gets added to the map.\n * \n * The returned map preserves
the entry iteration order of the original collection.\n * \n * @sample
samples.collections.Collections.Transformations.associateByWithValueTransform\n
\npublic inline fun <T, K, V>
Iterable<T>.associateBy(keySelector: (T) -> K, valueTransform: (T) -> V):
Map<K, V> {
\n val capacity = mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16)\n return
associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}
\n\n/**
\n * Populates and
returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function
applied to each element of the given collection\n * and value is the element itself.\n * \n * If any two elements
would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateByTo\n *
\npublic inline fun <T, K, M : MutableMap<in
K, in T>>
Iterable<T>.associateByTo(destination: M, keySelector: (T) -> K): M {
\n for (element in this) {\n
destination.put(keySelector(element), element)\n }\n return destination\n}
\n\n/**
\n * Populates and returns the
[destination]
mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and value is
provided by the [valueTransform] function applied to elements of the given collection.\n * \n * If any two elements
would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateByToWithValueTransform\n *
\npublic inline fun <T, K,
V, M : MutableMap<in K, in V>>
Iterable<T>.associateByTo(destination: M, keySelector: (T) -> K,
valueTransform: (T) -> V): M {
\n for (element in this) {\n
destination.put(keySelector(element),
valueTransform(element))\n }\n return destination\n}
\n\n/**
\n * Populates and returns the [destination] mutable
map with key-value pairs\n * provided by [transform] function applied to each element of the given collection.\n *
\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * @sample
samples.collections.Collections.Transformations.associateTo\n
\npublic inline fun <T, K, V, M : MutableMap<in K, in V>>
Iterable<T>.associateTo(destination: M, transform:
(T) -> Pair<K, V>): M {
\n for (element in this) {\n
destination += transform(element)\n }\n return
destination\n}
\n\n/**
\n * Returns a [Map] where keys are elements from the given collection and values are\n *
produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one
gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original collection.\n *
\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n *
\n@SinceKotlin("1.3")\npublic
inline fun <K, V>
Iterable<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {
\n val result =
LinkedHashMap<K, V>(mapCapacity(collectionSizeOrDefault(10)).coerceAtLeast(16))\n return
associateWithTo(result, valueSelector)\n}
\n\n/**
\n * Populates and returns
the [destination] mutable map with key-value pairs for each element of the given collection,\n * where key is the
element itself and value is provided by the [valueSelector] function applied to that key.\n * \n * If any two elements

```

are equal, the last one overwrites the former value in the map.

```

 * \n * @sample
 samples.collections.Collections.Transformations.associateWithTo
 * \n * @SinceKotlin("1.3")
 public inline fun
 <K, V, M : MutableMap<in K, in V>> Iterable<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M
 {
 \n for (element in this) {
 \n destination.put(element, valueSelector(element))
 \n }
 \n return
 destination
 \n }
 \n /**
 * Appends all elements to the given [destination] collection.
 * \n * public fun <T, C :
 MutableCollection<in T>> Iterable<T>.toCollection(destination: C): C
 {
 \n for (item in this) {
 \n destination.add(item)
 \n }
 \n return destination
 \n }
 \n /**
 * Returns a new [HashSet] of all elements.
 * \n * public fun <T> Iterable<T>.toHashSet():
 HashSet<T>
 {
 \n return toCollection(HashSet<T>(mapCapacity(collectionSizeOrDefault(12))))
 \n }
 \n /**
 * Returns a [List] containing all elements.
 * \n * public fun <T> Iterable<T>.toList(): List<T>
 {
 \n if (this is
 Collection) {
 \n return when (size) {
 \n 0 -> emptyList()
 \n 1 -> listOf(if (this is List) get(0) else
 iterator().next())
 \n else -> this.toMutableList()
 \n }
 \n }
 \n return
 this.toMutableList().optimizeReadOnlyList()
 \n }
 \n /**
 * Returns a new [MutableList] filled with all elements of
 this collection.
 * \n * public fun <T> Iterable<T>.toMutableList(): MutableList<T>
 {
 \n if (this is Collection<T>)
 \n return this.toMutableList()
 \n return toCollection(ArrayList<T>())
 \n }
 \n /**
 * Returns a new [MutableList]
 filled with all elements of this collection.
 * \n * public fun <T> Collection<T>.toMutableList(): MutableList<T>
 {
 \n return ArrayList(this)
 \n }
 \n /**
 * Returns a [Set] of all elements.
 * \n * \n * The
 returned set preserves the element iteration order of the original collection.
 * \n * public fun <T>
 Iterable<T>.toSet(): Set<T>
 {
 \n if (this is Collection) {
 \n return when (size) {
 \n 0 -> emptySet()
 \n 1 -> setOf(if (this is List) this[0] else iterator().next())
 \n else ->
 toCollection(LinkedHashSet<T>(mapCapacity(size)))
 \n }
 \n }
 \n return
 toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()
 \n }
 \n /**
 * Returns a single list of all elements
 yielded from results of [transform] function being invoked on each element of original collection.
 * \n * \n * @sample
 samples.collections.Collections.Transformations.flatMap
 * \n * public inline fun <T, R>
 Iterable<T>.flatMap(transform: (T) -> Iterable<R>): List<R>
 {
 \n return flatMapTo(ArrayList<R>(),
 transform)
 \n }
 \n /**
 * Returns a single list of all elements yielded from results of [transform] function being
 invoked on each element of original collection.
 * \n * \n * @sample
 samples.collections.Collections.Transformations.flatMap
 * \n * @SinceKotlin("1.4")
 * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * \n * @OverloadResolution
 ByLambdaReturnType
 * \n * @kotlin.jvm.JvmName("flatMapSequence")
 * \n * public inline fun <T, R>
 Iterable<T>.flatMap(transform: (T) -> Sequence<R>): List<R>
 {
 \n return flatMapTo(ArrayList<R>(),
 transform)
 \n }
 \n /**
 * Returns a single list of all elements yielded from results of [transform] function being
 invoked on each element
 * \n * and its index in the original collection.
 * \n * \n * @sample
 samples.collections.Collections.Transformations.flatMapIndexed
 * \n * @SinceKotlin("1.4")
 * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * \n * @OverloadResolution
 ByLambdaReturnType
 * \n * @kotlin.jvm.JvmName("flatMapIndexedIterable")
 * \n * @kotlin.internal.InlineOnly
 * \n * public
 inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): List<R>
 {
 \n return
 flatMapIndexedTo(ArrayList<R>(), transform)
 \n }
 \n /**
 * Returns a single
 list of all elements yielded from results of [transform] function being invoked on each element
 * \n * and its index in
 the original collection.
 * \n * \n * @sample
 samples.collections.Collections.Transformations.flatMapIndexed
 * \n * @SinceKotlin("1.4")
 * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * \n * @OverloadResolution
 ByLambdaReturnType
 * \n * @kotlin.jvm.JvmName("flatMapIndexedSequence")
 * \n * @kotlin.internal.InlineOnly
 * \n * publi
 c inline fun <T, R> Iterable<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): List<R>
 {
 \n return
 flatMapIndexedTo(ArrayList<R>(), transform)
 \n }
 \n /**
 * Appends all elements yielded from results of
 [transform] function being invoked on each element
 * \n * and its index in the original collection, to the given
 [destination].
 * \n * \n * @SinceKotlin("1.4")
 * \n * @OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * \n * @OverloadResolution
 ByLambdaReturnType
 * \n * @kotlin.jvm.JvmName("flatMapIndexedIterableTo")
 * \n * @kotlin.internal.InlineOnly
 * \n * publi

```

c inline

```
fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform: (index: Int, T)
-> Iterable<R>): C { \n var index = 0 \n for (element in this) { \n val list =
transform(checkIndexOverflow(index++), element) \n destination.addAll(list) \n } \n return
destination \n } \n /** \n * Appends all elements yielded from results of [transform] function being invoked on each
element \n * and its index in the original collection, to the given [destination]. \n
*\n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.jvm.JvmName("flatMapIndexedSequenceTo") \n @kotlin.internal.InlineOnly \n pu
blic inline fun <T, R, C : MutableCollection<in R>> Iterable<T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C { \n var index = 0 \n for (element in this) { \n val list =
transform(checkIndexOverflow(index++), element) \n destination.addAll(list) \n
} \n return destination \n } \n /** \n * Appends all elements yielded from results of [transform] function being
invoked on each element of original collection, to the given [destination]. \n * \n public inline fun <T, R, C :
MutableCollection<in R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C { \n for
(element in this) { \n val list = transform(element) \n destination.addAll(list) \n } \n return
destination \n } \n /** \n * Appends all elements yielded from results of [transform] function being invoked on each
element of original collection, to the given [destination]. \n
*\n @SinceKotlin("1.4") \n @OptIn(kotlin.experimental.ExperimentalTypeInference::class) \n @OverloadResolution
ByLambdaReturnType \n @kotlin.jvm.JvmName("flatMapSequenceTo") \n public inline fun <T, R, C :
MutableCollection<in R>> Iterable<T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C { \n for
(element in this) { \n val list = transform(element) \n
destination.addAll(list) \n } \n return destination \n } \n /** \n * Groups elements of the original collection by
the key returned by the given [keySelector] function \n * applied to each element and returns a map where each
group key is associated with a list of corresponding elements. \n * \n * The returned map preserves the entry iteration
order of the keys produced from the original collection. \n * \n * @sample
samples.collections.Collections.Transformations.groupBy \n * \n public inline fun <T, K>
Iterable<T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> { \n return groupByTo(LinkedHashMap<K,
MutableList<T>>(), keySelector) \n } \n /** \n * Groups values returned by the [valueTransform] function applied to
each element of the original collection \n * by the key returned by the given [keySelector] function applied to the
element \n * and returns a map where each group key is associated with a list of corresponding values. \n * \n * The
returned map preserves the entry iteration
order of the keys produced from the original collection. \n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues \n * \n public inline fun <T, K, V>
Iterable<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> { \n return
groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform) \n } \n /** \n * Groups elements
of the original collection by the key returned by the given [keySelector] function \n * applied to each element and
puts to the [destination] map each group key associated with a list of corresponding elements. \n * \n * @return The
[destination] map. \n * \n * @sample samples.collections.Collections.Transformations.groupBy \n * \n public inline
fun <T, K, M : MutableMap<in K, MutableList<T>>> Iterable<T>.groupByTo(destination: M, keySelector: (T) ->
K): M { \n for (element in this) { \n val key = keySelector(element) \n val list = destination.getOrPut(key) {
ArrayList<T>() } \n list.add(element) \n
} \n return destination \n } \n /** \n * Groups values returned by the [valueTransform] function applied to each
element of the original collection \n * by the key returned by the given [keySelector] function applied to the
element \n * and puts to the [destination] map each group key associated with a list of corresponding values. \n * \n *
@return The [destination] map. \n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues \n * \n public inline fun <T, K, V, M :
MutableMap<in K, MutableList<V>>> Iterable<T>.groupByTo(destination: M, keySelector: (T) -> K,
valueTransform: (T) -> V): M { \n for (element in this) { \n val key = keySelector(element) \n val list =
```



```

List<T> {\n return this.toMutableSet().toList()\n}\n\n/**\n * Returns a list containing only elements from the
given collection\n * having
 distinct keys returned by the given [selector] function.\n * \n * Among elements of the given collection with equal
keys, only the first one will be present in the resulting list.\n * The elements in the resulting list are in the same order
as they were in the source collection.\n * \n * @sample
samples.collections.Collections.Transformations.distinctAndDistinctBy\n */\npublic inline fun <T, K>
Iterable<T>.distinctBy(selector: (T) -> K): List<T> {\n val set = HashSet<K>()\n val list = ArrayList<T>()\n
for (e in this) {\n val key = selector(e)\n if (set.add(key))\n list.add(e)\n }\n return list\n}\n\n/**\n * Returns a set containing all elements that are contained by both this collection and the specified collection.\n * \n *
The returned set preserves the element iteration order of the original collection.\n * \n * To get a set containing all
elements that are contained at least in one of these collections use [union].\n */\npublic infix fun
<T> Iterable<T>.intersect(other: Iterable<T>): Set<T> {\n val set = this.toMutableSet()\n set.retainAll(other)\n
return set\n}\n\n/**\n * Returns a set containing all elements that are contained by this collection and not contained
by the specified collection.\n * \n * The returned set preserves the element iteration order of the original
collection.\n */\npublic infix fun <T> Iterable<T>.subtract(other: Iterable<T>): Set<T> {\n val set =
this.toMutableSet()\n set.removeAll(other)\n return set\n}\n\n/**\n * Returns a new [MutableSet] containing all
distinct elements from the given collection.\n * \n * The returned set preserves the element iteration order of the
original collection.\n */\npublic fun <T> Iterable<T>.toMutableSet(): MutableSet<T> {\n return when (this) {\n
is Collection<T> -> LinkedHashSet(this)\n else -> toCollection(LinkedHashSet<T>())\n }\n}\n\n/**\n *
Returns a set containing all distinct elements from both collections.\n * \n *
The returned set preserves the element iteration order of the original collection.\n * Those elements of the [other]
collection that are unique are iterated in the end\n * in the order of the [other] collection.\n * \n * To get a set
containing all elements that are contained in both collections use [intersect].\n */\npublic infix fun <T>
Iterable<T>.union(other: Iterable<T>): Set<T> {\n val set = this.toMutableSet()\n set.addAll(other)\n
return set\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the collection
contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the
predicate.\n * See a more detailed explanation of this logic concept in ["Vacuous
truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample
samples.collections.Collections.Aggregates.all\n */\npublic inline fun <T> Iterable<T>.all(predicate: (T) ->
Boolean): Boolean {\n if (this is Collection
 && isEmpty()) return true\n for (element in this) if (!predicate(element)) return false\n return true\n}\n\n/**\n *
Returns `true` if collection has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n */\npublic fun <T> Iterable<T>.any(): Boolean {\n if (this is
Collection) return !isEmpty()\n return iterator().hasNext()\n}\n\n/**\n * Returns `true` if at least one element
matches the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n */\npublic inline fun <T> Iterable<T>.any(predicate: (T) -> Boolean): Boolean {\n if (this is Collection &&
isEmpty()) return false\n for (element in this) if (predicate(element)) return true\n return false\n}\n\n/**\n *
Returns the number of elements in this collection.\n */\npublic fun <T> Iterable<T>.count(): Int {\n if (this is
Collection) return size\n var count = 0\n for (element in this) checkCountOverflow(++count)\n return
count\n}\n\n/**\n * Returns the number of elements in this collection.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Collection<T>.count(): Int {\n return size\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n */\npublic inline fun <T> Iterable<T>.count(predicate: (T) -> Boolean): Int {\n if (this is Collection
&& isEmpty()) return 0\n var count = 0\n for (element in this) if (predicate(element))
 checkCountOverflow(++count)\n return count\n}\n\n/**\n * Accumulates value starting with [initial] value and
applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the
specified [initial] value if the collection is empty.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n */\npublic inline fun <T, R>

```

```

Iterable<T>.fold(initial: R, operation: (acc: R, T) -> R): R {
 var accumulator = initial
 for (element in this) accumulator = operation(accumulator, element)
 return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from left to right to current accumulator value and each element with its index in the original collection.

Returns the specified [initial] value if the collection is empty.

@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

```

public inline fun <T, R>
Iterable<T>.foldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): R {
 var index = 0
 var accumulator = initial
 for (element in this) accumulator = operation(checkIndexOverflow(index++), accumulator, element)
 return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element and current accumulator value.

Returns the specified [initial] value if the list is empty.

@param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.

```

public inline fun <T, R>
List<T>.foldRight(initial: R, operation: (T, acc: R) -> R): R {
 var accumulator = initial
 if (!isEmpty()) {
 val iterator = listIterator(size)
 while (iterator.hasPrevious()) {
 accumulator = operation(iterator.previous(), accumulator)
 }
 }
 return accumulator
}

```

Accumulates value starting with [initial] value and applying [operation] from right to left to each element with its index in the original list and current accumulator value.

Returns the specified [initial] value if the list is empty.

@param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

public inline fun <T, R>
List<T>.foldRightIndexed(initial: R, operation: (index: Int, T, acc: R) -> R): R {
 var accumulator = initial
 if (!isEmpty()) {
 val iterator = listIterator(size)
 while (iterator.hasPrevious()) {
 val index = iterator.previousIndex()
 accumulator = operation(index, iterator.previous(), accumulator)
 }
 }
 return accumulator
}

```

Performs the given [action] on each element.

```

@kotlin.internal.HidesMembers
public inline fun <T>
Iterable<T>.forEach(action: (T) -> Unit): Unit {
 for (element in this) action(element)
}

```

Performs the given [action] on each element, providing sequential index with the element.

@param [action] function that takes the index of an element and the element itself and performs the action on the element.

```

public inline fun <T>
Iterable<T>.forEachIndexed(action: (index: Int, T) -> Unit): Unit {
 var index = 0
 for (item in this) action(checkIndexOverflow(index++), item)
}

```

Returns the largest element.

If any of elements is `NaN` returns `NaN`.

@throws

NoSuchElementException if the collection is empty.

```

@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public fun Iterable<Double>.max(): Double {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var max = iterator.next()
 while (iterator.hasNext()) {
 val e = iterator.next()
 max = maxOf(max, e)
 }
 return max
}

```

Returns the largest element.

If any of elements is `NaN` returns `NaN`.

@throws NoSuchElementException if the collection is empty.

```

@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public fun Iterable<Float>.max(): Float {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var max = iterator.next()
 while (iterator.hasNext()) {
 val e = iterator.next()
 max = maxOf(max, e)
 }
 return max
}

```

Returns the largest element.

@throws NoSuchElementException if the collection is empty.

```

@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public fun <T : Comparable<T>> Iterable<T>.max(): T {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var max = iterator.next()
 while (iterator.hasNext()) {
 val e = iterator.next()
 if (max < e) max = e
 }
 return max
}

```

Returns the first element yielding the largest value of the given function.

@throws NoSuchElementException if the collection is empty.

@sample samples.collections.Collections.Aggregates.maxBy

```

@SinceKotlin("1.7")
@kotlin.jvm.JvmName("maxByOrNull")
@Suppress("CONFLICTING_OVERLOADS")
public inline fun <T, R : Comparable<R>> Iterable<T>.maxBy(selector:

```



```

(T) -> R): T {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var maxElem = iterator.next()
 if (!iterator.hasNext()) return maxElem
 var maxValue = selector(maxElem)
 while (iterator.hasNext()) {
 val e = iterator.next()
 val v = selector(e)
 if (maxValue < v) {
 maxElem = e
 maxValue = v
 }
 }
 return maxElem
}

Returns the first element yielding the largest value of the given function or `null` if there are no elements.

@sample
samples.collections.Collections.Aggregates.maxByOrNull

*/
@SinceKotlin("1.4")
public inline fun <T, R : Comparable<R>> Iterable<T>.maxByOrNull(selector: (T) -> R): T? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var maxElem = iterator.next()
 if (!iterator.hasNext()) return maxElem
 var maxValue = selector(maxElem)
 do {
 val e = iterator.next()
 val v = selector(e)
 if (maxValue < v) {
 maxElem = e
 maxValue = v
 }
 } while (iterator.hasNext())
 return maxElem
}

Returns the largest value among all values produced by [selector] function applied to each element in the collection. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

@throws NoSuchElementException if the collection is empty.

*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.maxOf(selector: (T) -> Double): Double {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var maxValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 maxValue = maxOf(maxValue, v)
 }
 return maxValue
}

Returns the largest value among all values produced by [selector] function applied to each element in the collection. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

@throws NoSuchElementException if the collection is empty.

*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.maxOf(selector: (T) -> Float): Float {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var maxValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 maxValue = maxOf(maxValue, v)
 }
 return maxValue
}

Returns the largest value among all values produced by [selector] function applied to each element in the collection.

@throws NoSuchElementException if the collection is empty.

*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R : Comparable<R>> Iterable<T>.maxOf(selector: (T) -> R): R {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var maxValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 if (maxValue < v) {
 maxValue = v
 }
 }
 return maxValue
}

Returns the largest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.maxOfOrNull(selector: (T) -> Double): Double? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var maxValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 maxValue = maxOf(maxValue, v)
 }
 return maxValue
}

Returns the largest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements. If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

*/
@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.maxOfOrNull(selector: (T)

```

```

-> Float): Float? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var maxV = selector(iterator.next())\n while (iterator.hasNext())\n {\n val v = selector(iterator.next())\n maxV = maxOf(maxV, v)\n }\n return maxV\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the collection or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>\nIterable<T>.maxOfOrNull(selector: (T) -> R): R? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var maxV = selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n if (maxV < v) {\n maxV = v\n }\n }\n return maxV\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the collection.\n */\n\n * \n * @throws NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R>\nIterable<T>.maxOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n val iterator = iterator()\n if (!iterator.hasNext()) throw NoSuchElementException()\n var maxV = selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n if (comparator.compare(maxV, v) < 0) {\n maxV = v\n }\n }\n return maxV\n}\n\n/**\n * Returns the largest value according to the provided [comparator]\n * among all values produced by [selector] function applied to each element in the collection or `null`\n * if there are no elements.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun <T, R> Iterable<T>.maxOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var maxV = selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n if (comparator.compare(maxV, v) < 0) {\n maxV = v\n }\n }\n return maxV\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n */\n\n@SinceKotlin("1.4")\npublic fun\nIterable<Double>.maxOrNull(): Double? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var max = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n max = maxOf(max, e)\n }\n return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n */\n\n@SinceKotlin("1.4")\npublic fun\nIterable<Float>.maxOrNull(): Float? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var max = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n max = maxOf(max, e)\n }\n return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>>\nIterable<T>.maxOrNull(): T? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var max = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic\nfun <T> Iterable<T>.maxWith(comparator: Comparator<in T>): T {\n val iterator = iterator()\n if (!iterator.hasNext()) throw NoSuchElementException()\n var max = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\npublic fun <T> Iterable<T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var max = iterator.next()\n while

```

```

(iterator.hasNext()) {\n val e = iterator.next()\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the smallest element.\n * \n * If any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic\n fun Iterable<Double>.min(): Double {\n val iterator = iterator()\n if (!iterator.hasNext()) throw\n NoSuchElementException()\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e =\n iterator.next()\n min = minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n * \n * If\n * any of elements is `NaN` returns `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun Iterable<Float>.min(): Float {\n val iterator = iterator()\n if (!iterator.hasNext()) throw\n NoSuchElementException()\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e =\n iterator.next()\n min = minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException\n * if the collection is empty.\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun <T : Comparable<T>> Iterable<T>.min(): T {\n val iterator = iterator()\n if\n (!iterator.hasNext()) throw NoSuchElementException()\n var min = iterator.next()\n while (iterator.hasNext())\n {\n val e = iterator.next()\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the first element\n * yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the collection is\n * empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <T, R : Comparable<R>> Iterable<T>.minBy(selector: (T) -> R): T {\n val iterator =\n iterator()\n if (!iterator.hasNext()) throw NoSuchElementException()\n var minElem = iterator.next()\n if\n (!iterator.hasNext())\n return minElem\n var minValue = selector(minElem)\n do {\n val e = iterator.next()\n val v =\n selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n } while\n (iterator.hasNext())\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the\n * given function or `null` if there are no elements.\n * \n * @sample\n * samples.collections.Collections.Aggregates.minByOrNull\n */\n\n@SinceKotlin("1.4")\npublic inline fun <T, R : Comparable<R>> Iterable<T>.minByOrNull(selector: (T) -> R): T? {\n val iterator = iterator()\n if\n (!iterator.hasNext()) return null\n var minElem = iterator.next()\n if (!iterator.hasNext()) return minElem\n var\n minValue = selector(minElem)\n do {\n val e = iterator.next()\n val v = selector(e)\n if (minValue >\n v) {\n minElem = e\n minValue = v\n }\n } while (iterator.hasNext())\n return\n minElem\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to\n * each element in the collection.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result\n * is `NaN`.\n * \n * @throws NoSuchElementException if the collection is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->\n Double): Double {\n val iterator = iterator()\n if (!iterator.hasNext()) throw\n NoSuchElementException()\n var\n minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n minValue =\n minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all\n * values produced by [selector] function\n * applied to each element in the collection.\n * \n * If any of values\n * produced\n * by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the\n * collection is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.minOf(selector: (T) ->

```

```

Float): Float {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var minValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 minValue = minOf(minValue, v)
 }
 return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the collection.

@throws NoSuchElementException if the collection is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R : Comparable<R>> Iterable<T>.minOf(selector: (T) -> R): R {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var minValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 if (minValue > v) {
 minValue = v
 }
 }
 return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.

If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.minOfOrNull(selector: (T) -> Double): Double? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var minValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 minValue = minOf(minValue, v)
 }
 return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.

If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.minOfOrNull(selector: (T) -> Float): Float? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var minValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 minValue = minOf(minValue, v)
 }
 return minValue
}

Returns the smallest value among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R : Comparable<R>> Iterable<T>.minOfOrNull(selector: (T) -> R): R? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var minValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 if (minValue > v) {
 minValue = v
 }
 }
 return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the collection.

@throws NoSuchElementException if the collection is empty.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R> Iterable<T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {
 val iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var minValue = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 if (comparator.compare(minValue, v) > 0) {
 minValue = v
 }
 }
 return minValue
}

Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the collection or `null` if there are no elements.

@SinceKotlin("1.4")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.internal.InlineOnly
public inline fun <T, R> Iterable<T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {
 val iterator =

```

```

 if (!iterator.hasNext()) return null\n var minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n
 val v = selector(iterator.next())\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n
 }\n return minValue\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n * \n * If any
of elements is `NaN` returns `NaN`.\n * \n * @SinceKotlin("1.4")\n\npublic fun Iterable<Double>.minOrNull():
Double? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var min = iterator.next()\n while
(iterator.hasNext()) {\n val e = iterator.next()\n min = minOf(min, e)\n }\n return min\n}\n\n/**\n *
Returns the smallest element or `null` if there are no elements.\n * \n * If any of elements is `NaN` returns `NaN`.\n
* \n * @SinceKotlin("1.4")\n\npublic fun Iterable<Float>.minOrNull(): Float? {\n val iterator = iterator()\n if
(!iterator.hasNext()) return
null\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n min =
minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
* \n * @SinceKotlin("1.4")\n\npublic fun <T : Comparable<T>> Iterable<T>.minOrNull(): T? {\n val iterator =
iterator()\n if (!iterator.hasNext()) return null\n var min = iterator.next()\n while (iterator.hasNext()) {\n
 val e = iterator.next()\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having
the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the
collection is empty.\n
\n* \n * @SinceKotlin("1.7")\n\n@kotlin.jvm.JvmName("minWithOrThrow")\n\n@Suppress("CONFLICTING_OVERLOADS")\n\npublic fun <T> Iterable<T>.minWith(comparator: Comparator<in T>): T {\n val iterator = iterator()\n
 if (!iterator.hasNext()) throw NoSuchElementException()\n var
min = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n if (comparator.compare(min,
e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to
the provided [comparator] or `null` if there are no elements.\n * \n * @SinceKotlin("1.4")\n\npublic fun <T>
Iterable<T>.minWithOrNull(comparator: Comparator<in T>): T? {\n val iterator = iterator()\n if
(!iterator.hasNext()) return null\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e =
iterator.next()\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns `true` if
the collection has no elements.\n * \n * @sample samples.collections.Collections.Aggregates.none\n * \n\npublic fun
<T> Iterable<T>.none(): Boolean {\n if (this is Collection) return isEmpty()\n return
!iterator().hasNext()\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n * \n * \n
* @sample samples.collections.Collections.Aggregates.noneWithPredicate\n * \n\npublic inline fun <T>
Iterable<T>.none(predicate: (T) -> Boolean): Boolean {\n if (this is Collection && isEmpty()) return true\n for
(element in this) if (predicate(element)) return false\n return true\n}\n\n/**\n * Performs the given [action] on each
element and returns the collection itself afterwards.\n * \n * @SinceKotlin("1.1")\n\npublic inline fun <T, C :
Iterable<T>> C.onEach(action: (T) -> Unit): C {\n return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with the element,\n * and
returns the collection itself afterwards.\n * \n * @param [action] function that takes the index of an element and the
element itself\n * and performs the action on the element.\n * \n * @SinceKotlin("1.4")\n\npublic inline fun <T, C :
Iterable<T>> C.onEachIndexed(action: (index: Int, T) -> Unit): C {\n return apply { forEachIndexed(action)
}\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to right\n * to
current accumulator value and each element.\n * \n * \n * Throws an exception if this collection is empty. If the
collection can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver
is empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and
calculates the next accumulator value.\n * \n * \n * @sample samples.collections.Collections.Aggregates.reduce\n * \n\npublic inline fun <S, T : S> Iterable<T>.reduce(operation: (acc: S, T) -> S): S {\n val iterator = this.iterator()\n
 if (!iterator.hasNext()) throw UnsupportedOperationException("Empty collection can't be reduced.")\n var
accumulator: S = iterator.next()\n while (iterator.hasNext()) {\n accumulator = operation(accumulator,
iterator.next())\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
with its index in the original collection.\n * \n * \n * Throws an exception if this collection is empty. If the collection can

```

be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduce

```

public inline fun <S, T : S>
Iterable<T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {
 val iterator = this.iterator()
 if (!iterator.hasNext()) throw UnsupportedOperationException("Empty collection can't be reduced.")
 var index = 1
 var accumulator: S = iterator.next()
 while (iterator.hasNext()) {
 accumulator =
 operation(checkIndexOverflow(index++),
 accumulator, iterator.next())
 }
 return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element with its index in the original collection.

Returns `null` if the collection is empty.

`@param [operation]` function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceOrNull

```

@SinceKotlin("1.4")
public inline fun <S, T : S> Iterable<T>.reduceIndexedOrNull(operation: (index: Int,
acc: S, T) -> S): S? {
 val iterator = this.iterator()
 if (!iterator.hasNext()) return null
 var index = 1
 var accumulator: S = iterator.next()
 while (iterator.hasNext()) {
 accumulator =
 operation(checkIndexOverflow(index++), accumulator, iterator.next())
 }
 return accumulator
}

```

Accumulates value starting with the first element and applying [operation] from left to right to current accumulator value and each element.

Returns `null` if the collection is empty.

`@param [operation]` function that takes current accumulator value and an element, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceOrNull

```

@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <S, T : S>
Iterable<T>.reduceOrNull(operation: (acc: S, T) -> S): S? {
 val iterator = this.iterator()
 if (!iterator.hasNext()) return null
 var accumulator: S = iterator.next()
 while (iterator.hasNext()) {
 accumulator = operation(accumulator, iterator.next())
 }
 return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.

Throws an exception if this list is empty. If the list can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceRight

```

public inline fun <S, T : S>
List<T>.reduceRight(operation: (T, acc: S) -> S): S {
 val iterator = listIterator(size)
 if (!iterator.hasPrevious())
 throw UnsupportedOperationException("Empty list can't be reduced.")
 var accumulator: S = iterator.previous()
 while (iterator.hasPrevious()) {
 accumulator =
 operation(iterator.previous(), accumulator)
 }
 return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original list and current accumulator value.

Throws an exception if this list is empty. If the list can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceRight

```

public inline fun <S, T : S> List<T>.reduceRightIndexed(operation: (index: Int, T, acc: S) -> S): S {
 val iterator = listIterator(size)
 if (!iterator.hasPrevious())
 throw UnsupportedOperationException("Empty list can't be reduced.")
 var accumulator: S = iterator.previous()
 while (iterator.hasPrevious()) {
 val index = iterator.previousIndex()
 accumulator = operation(index, iterator.previous(), accumulator)
 }
 return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original list and current accumulator value.

Returns `null` if the list is empty.

`@param [operation]` function that takes the

index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

```

@sample samples.collections.Collections.Aggregates.reduceRightOrNull
*/
@SinceKotlin("1.4")
public inline fun <S, T : S> List<T>.reduceRightIndexedOrNull(operation: (index: Int, T, acc: S) -> S): S? {
 val iterator = listIterator(size)
 if (!iterator.hasPrevious()) return null
 var accumulator: S = iterator.previous()
 while (iterator.hasPrevious()) {
 val index = iterator.previousIndex()
 accumulator = operation(index, iterator.previous(), accumulator)
 }
 return accumulator
}

```

Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value. Returns `null` if the list is empty. @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.

```

@sample samples.collections.Collections.Aggregates.reduceRightOrNull
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <S, T : S> List<T>.reduceRightOrNull(operation: (T, acc: S) -> S): S? {
 val iterator = listIterator(size)
 if (!iterator.hasPrevious()) return null
 var accumulator: S = iterator.previous()
 while (iterator.hasPrevious()) {
 accumulator = operation(iterator.previous(), accumulator)
 }
 return accumulator
}

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.

```

@sample samples.collections.Collections.Aggregates.runningFold
*/
@SinceKotlin("1.4")
public inline fun <T, R> Iterable<T>.runningFold(initial: R, operation: (acc: R, T) -> R): List<R> {
 val estimatedSize = collectionSizeOrDefault(9)
 if (estimatedSize == 0) return listOf(initial)
 val result = ArrayList<R>(estimatedSize + 1).apply { add(initial) }
 var accumulator = initial
 for (element in this) {
 accumulator = operation(accumulator, element)
 result.add(accumulator)
 }
 return result
}

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original collection and current accumulator value that starts with [initial] value. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator value.

```

@sample samples.collections.Collections.Aggregates.runningFold
*/
@SinceKotlin("1.4")
public inline fun <T, R> Iterable<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {
 val estimatedSize = collectionSizeOrDefault(9)
 if (estimatedSize == 0) return listOf(initial)
 val result = ArrayList<R>(estimatedSize + 1).apply { add(initial) }
 var index = 0
 var accumulator = initial
 for (element in this) {
 accumulator = operation(index++, accumulator, element)
 result.add(accumulator)
 }
 return result
}

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element and current accumulator value that starts with the first element of this collection. Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list. @param [operation] function that takes current accumulator value and the element, and calculates the next accumulator value.

```

@sample samples.collections.Collections.Aggregates.runningReduce
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <S, T : S> Iterable<T>.runningReduce(operation: (acc: S, T) -> S): List<S> {
 val iterator = this.iterator()
 if (!iterator.hasNext()) return emptyList()
 var accumulator: S = iterator.next()
 val result = ArrayList<S>(collectionSizeOrDefault(10)).apply { add(accumulator) }
 while (iterator.hasNext()) {
 accumulator = operation(accumulator, iterator.next())
 result.add(accumulator)
 }
 return result
}

```

Returns a list containing successive accumulation values generated by applying [operation] from left to right to each element, its index in the original collection and current accumulator value that starts with the first element of this

```

collection.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it
would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of an
element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningReduce\n */\n@SinceKotlin("1.4")\npublic inline fun
<S, T : S> Iterable<T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): List<S> {\n val iterator =
this.iterator()\n if (!iterator.hasNext()) return emptyList()\n
 var accumulator: S = iterator.next()\n val result = ArrayList<S>(collectionSizeOrDefault(10)).apply {
add(accumulator) }\n var index = 1\n while (iterator.hasNext()) {\n accumulator = operation(index++,
accumulator, iterator.next())\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list
containing successive accumulation values generated by applying [operation] from left to right\n * to each element
and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting
list.\n * \n * @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scan(initial: R, operation:
(acc: R, T) -> R): List<R> {\n return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original collection and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value
passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting
list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the
element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <T, R>
Iterable<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the collection.\n */\n@Deprecated("Use sumOf
instead.")\n@ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline
fun <T> Iterable<T>.sumBy(selector: (T) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum +=
selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n */\n@Deprecated("Use sumOf instead.")\n@ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun <T>
Iterable<T>.sumByDouble(selector: (T) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the collection.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Iterable<T>.sumOf(selector: (T) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the collection.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Iterable<T>.sumOf(selector: (T) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this) {\n sum +=
selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the collection.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic

```



```

inline fun <T> Iterable<T>.sumOf(selector: (T) -> Long): Long {
 var sum: Long = 0.toLong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}

```

\* Returns the sum of all values produced by [selector] function applied to each element in the collection.

```

@SinceKotlin("1.5")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfUInt")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.sumOf(selector: (T) -> UInt): UInt {
 var sum: UInt = 0.toUInt()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}

```

\* Returns the sum of all values produced by [selector] function applied to each element in the collection.

```

@SinceKotlin("1.5")
@OptIn(kotlin.experimental.ExperimentalTypeInference::class)
@OverloadResolutionByLambdaReturnType
@kotlin.jvm.JvmName("sumOfULong")
@WasExperimental(ExperimentalUnsignedTypes::class)
@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.sumOf(selector: (T) -> ULong): ULong {
 var sum: ULong = 0.toULong()
 for (element in this) {
 sum += selector(element)
 }
 return sum
}

```

\* Returns an original collection containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null` elements.

```

public fun <T : Any>
Iterable<T?>.requireNoNulls(): Iterable<T> {
 for (element in this) {
 if (element == null) {
 throw
 IllegalArgumentException("null element found in $this.")
 }
 }
 @Suppress("UNCHECKED_CAST")
 return this as Iterable<T>
}

```

\* Returns an original collection containing all the non-`null` elements, throwing an [IllegalArgumentException] if there are any `null` elements.

```

public fun <T : Any>
List<T?>.requireNoNulls(): List<T> {
 for (element in this) {
 if (element == null) {
 throw
 IllegalArgumentException("null element found in $this.")
 }
 }
 @Suppress("UNCHECKED_CAST")
 return this as List<T>
}

```

\* Splits this collection into a list of lists each not exceeding the given [size].

\* The last list in the resulting list may have fewer elements than the given [size].

\* @param size the number of elements to take in each list, must be positive and can be greater than the number of elements in this collection.

\* @sample samples.collections.Collections.Transformations.chunked

```

@SinceKotlin("1.2")
public fun <T>
Iterable<T>.chunked(size: Int): List<List<T>> {
 return windowed(size, size, partialWindows = true)
}

```

\* Splits this collection into several lists each not exceeding the given [size]

\* and applies the given [transform] function to an each.

\* @return list of results of the [transform] applied to an each list.

\* Note that the list passed to the [transform] function is ephemeral and is valid only inside that function.

\* You should not store it or allow it to escape in some way, unless you made a snapshot of it.

\* The last list may have fewer elements than the given [size].

\* @param size the number of elements to take in each list, must be positive and can be greater than the number of elements in this collection.

\* @sample samples.text.Strings.chunkedTransform

```

@SinceKotlin("1.2")
public fun <T, R> Iterable<T>.chunked(size: Int, transform: (List<T>) -> R): List<R> {
 return windowed(size, size, partialWindows = true, transform = transform)
}

```

\* Returns a list containing all elements of the original collection without the first occurrence of the given [element].

```

public operator fun <T> Iterable<T>.minus(element: T): List<T> {
 val result = ArrayList<T>(collectionSizeOrDefault(10))
 var removed = false
 return this.filterTo(result) {
 if (!removed && it == element) {
 removed = true; false
 } else true
 }
}

```

\* Returns a list containing all elements of the original collection except the elements contained in the given [elements] array.

```

public operator fun <T> Iterable<T>.minus(elements: Array<out T>): List<T> {
 if (elements.isEmpty())
 return this.toList()
 return this.filterNot { it in elements }
}

```

\* Returns a list containing all elements of the original collection except the elements contained in the given [elements] collection.

```

public operator fun <T> Iterable<T>.minus(elements: Iterable<T>): List<T> {
 val other =
 elements.convertToListIfNotCollection()
 if (other.isEmpty())
 return this.toList()
 return this.filterNot {
 it in other
 }
}

```

\* Returns a list containing all elements of the original collection except

the elements contained in the given [elements] sequence.

```

public operator fun <T>
Iterable<T>.minus(elements: Sequence<T>): List<T> {
 val other = elements.toList()
 if (other.isEmpty())
 return this.toList()
 return this.filterNot { it in other }
}

```

\* Returns a list containing all elements of the original collection without the first occurrence of the given [element].

```

@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.minusElement(element: T): List<T> {
 return minus(element)
}

```

\* Splits the original collection into pair of lists, where \*first\* list contains elements for which [predicate] yielded `true`, while \*second\* list contains elements for which [predicate] yielded `false`.

```

@sample
samples.collections.Iterables.Operations.partition

```

```

public inline fun <T> Iterable<T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {
 val first = ArrayList<T>()
 val second = ArrayList<T>()
 for (element in this) {
 if (predicate(element)) {
 first.add(element)
 } else {
 second.add(element)
 }
 }
 return Pair(first, second)
}

```

\* Returns a list containing all elements of the original collection and then the given [element].

```

public operator fun <T> Iterable<T>.plus(element: T): List<T> {
 if (this is Collection) return this.plus(element)
 val result = ArrayList<T>()
 result.addAll(this)
 result.add(element)
 return result
}

```

\* Returns a list containing all elements of the original collection and then the given [element].

```

public operator fun <T> Collection<T>.plus(element: T): List<T> {
 val result = ArrayList<T>(size + 1)
 result.addAll(this)
 result.add(element)
 return result
}

```

\* Returns a list containing all elements of the original collection and then all elements of the given [elements] array.

```

public operator fun <T> Iterable<T>.plus(elements: Array<out T>): List<T> {
 if (this is Collection) return this.plus(elements)
 val result = ArrayList<T>()
 result.addAll(this)
 result.addAll(elements)
 return result
}

```

\* Returns a list containing all elements of the original collection and then all elements of the given [elements] array.

```

public operator fun <T> Collection<T>.plus(elements: Array<out T>): List<T> {
 val result = ArrayList<T>(this.size + elements.size)
 result.addAll(this)
 result.addAll(elements)
 return result
}

```

\* Returns a list containing all elements of the original collection and then all elements of the given [elements] collection.

```

public operator fun <T> Iterable<T>.plus(elements: Iterable<T>): List<T> {
 if (this is Collection) return this.plus(elements)
 val result = ArrayList<T>()
 result.addAll(this)
 result.addAll(elements)
 return result
}

```

\* Returns a list containing all elements of the original collection and then all elements of the given [elements] collection.

```

public operator fun <T> Collection<T>.plus(elements: Iterable<T>): List<T> {
 if (elements is Collection) {
 val result = ArrayList<T>(this.size + elements.size)
 result.addAll(this)
 result.addAll(elements)
 return result
 } else {
 val result = ArrayList<T>(this)
 result.addAll(elements)
 return result
 }
}

```

\* Returns a list containing all elements of the original collection and then all elements of the given [elements] sequence.

```

public operator fun <T> Iterable<T>.plus(elements: Sequence<T>): List<T> {
 val result = ArrayList<T>()
 result.addAll(this)
 result.addAll(elements)
 return result
}

```

\* Returns a list containing all elements of the original collection and then all elements of the given [elements] sequence.

```

public operator fun <T> Collection<T>.plus(elements: Sequence<T>): List<T> {
 val result = ArrayList<T>(this.size + 10)
 result.addAll(this)
 result.addAll(elements)
 return result
}

```

\* Returns a list containing all elements of the original collection and then the given [element].

```

@kotlin.internal.InlineOnly
public inline fun <T> Iterable<T>.plusElement(element: T): List<T> {
 return plus(element)
}

```

\* Returns a list containing all elements of the original collection and then the given [element].

```

@kotlin.internal.InlineOnly
public inline fun <T> Collection<T>.plusElement(element: T): List<T> {
 return plus(element)
}

```

\* Returns a list of snapshots of the window of the given [size] sliding along this collection with the given [step], where each snapshot is a list. Several last lists may have fewer elements than the given [size]. Both [size] and [step] must be positive and can be greater than the number of elements in this collection.

```

@param size the number of elements to take
in each window
@param step the number of elements to move the window forward by on an each step, by default 1
@param partialWindows controls whether or not to keep partial windows in the end if any, by default `false` which means partial windows won't be preserved

```

```

@sample

```

```

samples.collections.Sequences.Transformations.takeWindows\n *^\n@SinceKotlin("\1.2\")\npublic fun <T>
Iterable<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): List<List<T>> {\n
checkWindowSizeStep(size, step)\n if (this is RandomAccess && this is List) {\n val thisSize = this.size\n
val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n val result =
ArrayList<List<T>>(resultCapacity)\n var index = 0\n while (index in 0 until thisSize) {\n val
windowSize = size.coerceAtMost(thisSize - index)\n if (windowSize < size && !partialWindows) break\n
result.add(List(windowSize) { this[it
+ index] })\n index += step\n }\n return result\n }\n val result = ArrayList<List<T>>()\n
windowedIterator(iterator(), size, step, partialWindows, reuseBuffer = false).forEach {\n result.add(it)\n }
return result\n}\n\n/**\n * Returns a list of results of applying the given [transform] function to\n * an each list
representing a view over the window of the given [size]\n * sliding along this collection with the given [step].\n *
* Note that the list passed to the [transform] function is ephemeral and is valid only inside that function.\n * You
should not store it or allow it to escape in some way, unless you made a snapshot of it.\n * Several last lists may
have fewer elements than the given [size].\n * \n * Both [size] and [step] must be positive and can be greater than
the number of elements in this collection.\n * @param size the number of elements to take in each window\n *
@param step the number of elements to move the window forward
by on an each step, by default 1\n * @param partialWindows controls whether or not to keep partial windows in the
end if any,\n * by default `false` which means partial windows won't be preserved\n * \n * @sample
samples.collections.Sequences.Transformations.averageWindows\n *^\n@SinceKotlin("\1.2\")\npublic fun <T, R>
Iterable<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (List<T>) -> R):
List<R> {\n checkWindowSizeStep(size, step)\n if (this is RandomAccess && this is List) {\n val thisSize =
this.size\n val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n val result =
ArrayList<R>(resultCapacity)\n val window = MovingSubList(this)\n var index = 0\n while (index in 0
until thisSize) {\n val windowSize = size.coerceAtMost(thisSize - index)\n if (!partialWindows &&
windowSize < size) break\n window.move(index, index + windowSize)\n
result.add(transform(window))\n index += step\n }\n return result\n }\n val result =
ArrayList<R>()\n windowedIterator(iterator(), size, step, partialWindows, reuseBuffer = true).forEach {\n
result.add(transform(it))\n }\n return result\n}\n\n/**\n * Returns a list of pairs built from the elements of `this`
collection and the [other] array with the same index.\n * The returned list has length of the shortest collection.\n *
\n * @sample samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <T, R> Iterable<T>.zip(other:
Array<out R>): List<Pair<T, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values
built from the elements of `this` collection and the [other] array with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n *
\n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*^\npublic inline fun <T, R, V> Iterable<T>.zip(other: Array<out R>, transform: (a: T, b: R) -> V): List<V> {\n
val arraySize = other.size\n val list = ArrayList<V>(minOf(collectionSizeOrDefault(10), arraySize))\n var i =
0\n for (element in this) {\n if (i >= arraySize) break\n list.add(transform(element, other[i++]))\n }\n
return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] collection with
the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n *^\npublic infix fun <T, R> Iterable<T>.zip(other:
Iterable<R>): List<Pair<T, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of values
built from the elements of `this` collection and the [other] collection with the same index\n * using the provided
[transform] function applied to each pair of elements.\n *
The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n *^\npublic inline fun <T, R, V>
Iterable<T>.zip(other: Iterable<R>, transform: (a: T, b: R) -> V): List<V> {\n val first = iterator()\n val second
= other.iterator()\n val list = ArrayList<V>(minOf(collectionSizeOrDefault(10),
other.collectionSizeOrDefault(10)))\n while (first.hasNext() && second.hasNext()) {\n

```

```

list.add(transform(first.next(), second.next()))\n } return list\n}\n\n/**\n * Returns a list of pairs of each two adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less than two elements.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNext\n */\n@SinceKotlin("1.2")\npublic fun <T> Iterable<T>.zipWithNext(): List<Pair<T, T>> {\n return zipWithNext { a, b -> a to b }\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to an each pair of two adjacent elements in this collection.\n * \n * The returned list is empty if this collection contains less than two elements.\n * \n * @sample samples.collections.Collections.Transformations.zipWithNextToFindDeltas\n */\n@SinceKotlin("1.2")\npublic inline fun <T, R> Iterable<T>.zipWithNext(transform: (a: T, b: T) -> R): List<R> {\n val iterator = iterator()\n if (!iterator.hasNext()) return emptyList()\n val result = mutableListOf<R>()\n var current = iterator.next()\n while (iterator.hasNext()) {\n val next = iterator.next()\n result.add(transform(current, next))\n current = next\n }\n return result\n}\n\n/**\n * Appends the string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinTo\n */\npublic fun <T, A : Appendable> Iterable<T>.joinTo(buffer: A, separator: CharSequence = "\n", prefix: CharSequence = "\n", postfix: CharSequence = "\n", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): A {\n buffer.append(prefix)\n var count = 0\n for (element in this) {\n if (++count > 1) buffer.append(separator)\n if (limit < 0 || count <= limit) {\n buffer.appendElement(element, transform)\n } else break\n }\n if (limit >= 0 && count > limit) buffer.append(truncated)\n buffer.append(postfix)\n return buffer\n}\n\n/**\n * Creates a string from all the elements separated using [separator] and using the given [prefix] and [postfix] if supplied.\n * \n * If the collection could be huge, you can specify a non-negative value of [limit], in which case only the first [limit]\n * elements will be appended, followed by the [truncated] string (which defaults to "...").\n * \n * @sample samples.collections.Collections.Transformations.joinToString\n */\npublic fun <T> Iterable<T>.joinToString(separator: CharSequence = "\n", prefix: CharSequence = "\n", postfix: CharSequence = "\n", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? = null): String {\n return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated, transform).toString()\n}\n\n/**\n * Returns this collection as an [Iterable].\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Iterable<T>.asIterable(): Iterable<T> {\n return this\n}\n\n/**\n * Creates a [Sequence] instance that wraps the original collection returning its elements when being iterated.\n * \n * @sample samples.collections.Sequences.Building.sequenceFromCollection\n */\npublic fun <T> Iterable<T>.asSequence(): Sequence<T> {\n return Sequence { this.iterator() }\n}\n\n/**\n * Returns an average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfByte")\npublic fun Iterable<Byte>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n checkCountOverflow(++count)\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfShort")\npublic fun Iterable<Short>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n checkCountOverflow(++count)\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfInt")\npublic fun Iterable<Int>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n checkCountOverflow(++count)\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns an average value of elements in the collection.\n */\n@kotlin.jvm.JvmName("averageOfLong")\npublic fun Iterable<Long>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n checkCountOverflow(++count)\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns

```

```

an average value of elements in the collection.\n *\n@kotlin.jvm.JvmName("averageOfFloat")\npublic fun
Iterable<Float>.average(): Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n
sum += element\n checkCountOverflow(++count)\n }\n return if (count == 0) Double.NaN else sum /
count\n}\n\n/**\n * Returns an average value of elements in the collection.\n
*\n@kotlin.jvm.JvmName("averageOfDouble")\npublic fun Iterable<Double>.average():
Double {\n var sum: Double = 0.0\n var count: Int = 0\n for (element in this) {\n sum += element\n
checkCountOverflow(++count)\n }\n return if (count == 0) Double.NaN else sum / count\n}\n\n/**\n * Returns
the sum of all elements in the collection.\n *\n@kotlin.jvm.JvmName("sumOfByte")\npublic fun
Iterable<Byte>.sum(): Int {\n var sum: Int = 0\n for (element in this) {\n sum += element\n }\n return
sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfShort")\npublic fun Iterable<Short>.sum(): Int {\n var sum: Int = 0\n for
(element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the
collection.\n *\n@kotlin.jvm.JvmName("sumOfInt")\npublic fun Iterable<Int>.sum(): Int {\n var sum: Int = 0\n
for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements
in the collection.\n *\n@kotlin.jvm.JvmName("sumOfLong")\npublic fun Iterable<Long>.sum(): Long {\n var
sum: Long = 0L\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the
sum of all elements in the collection.\n *\n@kotlin.jvm.JvmName("sumOfFloat")\npublic fun
Iterable<Float>.sum(): Float {\n var sum: Float = 0.0f\n for (element in this) {\n sum += element\n }\n
return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfDouble")\npublic fun Iterable<Double>.sum(): Double {\n var sum: Double
= 0.0\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n"/\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin.collections\n\nimport
kotlin.comparisons.naturalOrder\n\nimport
kotlin.random.Random\n\nimport kotlin.js.arrayBufferIsView\n\n/**\n * Returns the array if it's not `null`, or an
empty array otherwise.\n * @sample samples.collections.Arrays.Usage.arrayOrEmpty\n
*\n@kotlin.internal.InlineOnly\npublic actual inline fun <T> Array<out T>?.orEmpty(): Array<out T> = this ?:
emptyArray<T>()\n\n/**\n * Returns a *typed* array containing all of the elements of this collection.\n * \n *
Allocates an array of runtime type `T` having its size equal to the size of this collection\n * and populates the array
with the elements of this collection.\n * @sample
samples.collections.Collections.Collections.collectionToTypedArray\n *\n@kotlin.internal.InlineOnly\npublic
actual inline fun <T> Collection<T>.toArray(): Array<T> =
copyToArray(this)\n\n@JsName("copyToArray")\n@PublishedApi\ninternal fun <T> copyToArray(collection:
Collection<T>): Array<T> {\n return if (collection.asDynamic().toArray !== undefined)\n collection.asDynamic().toArray().unsafeCast<Array<T>>()\n
 else\n copyToArrayImpl(collection).unsafeCast<Array<T>>()\n}\n\n@JsName("copyToArrayImpl")\ninternal actual fun
copyToArrayImpl(collection: Collection<*>): Array<Any?> {\n val array = emptyArray<Any?>()\n val iterator
= collection.iterator()\n while (iterator.hasNext())\n array.asDynamic().push(iterator.next())\n return
array\n}\n\n@JsName("copyToExistingArrayImpl")\ninternal actual fun <T> copyToArrayImpl(collection:
Collection<*>, array: Array<T>): Array<T> {\n if (array.size < collection.size)\n return
copyToArrayImpl(collection).unsafeCast<Array<T>>()\n val iterator = collection.iterator()\n var index = 0\n
while (iterator.hasNext()) {\n array[index++] = iterator.next().unsafeCast<T>()\n }\n if (index < array.size)
{\n array[index] = null.unsafeCast<T>()\n }\n return array\n}\n\n/**\n * Returns an immutable list
containing only the specified object [element].\n *\npublic
fun <T> listOf(element: T): List<T> =
arrayListOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual
inline fun <E> buildListInternal(builderAction: MutableList<E>.() -> Unit): List<E> {\n return

```

```

ArrayList<E>().apply(builderAction).build()\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildListInternal(capacity: Int, builderAction: MutableList<E>().-> Unit): List<E> {\n checkBuilderCapacity(capacity)\n return ArrayList<E>(capacity).apply(builderAction).build()\n}\n\n/**\n * Returns an immutable set containing only the specified object [element].\n */\npublic fun <T> setOf(element: T): Set<T> = hashSetOf(element)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildSetInternal(builderAction: MutableSet<E>().-> Unit): Set<E> {\n return LinkedHashSet<E>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <E> buildSetInternal(capacity: Int, builderAction: MutableSet<E>().-> Unit): Set<E> {\n return LinkedHashSet<E>(capacity).apply(builderAction).build()\n}\n\n/**\n * Returns an immutable map, mapping only the specified key to the\n * specified value.\n */\npublic fun <K, V> mapOf(pair: Pair<K, V>): Map<K, V> = hashMapOf(pair)\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <K, V> buildMapInternal(builderAction: MutableMap<K, V>().-> Unit): Map<K, V> {\n return LinkedHashMap<K, V>().apply(builderAction).build()\n}\n\n@PublishedApi\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\ninternal actual inline fun <K, V> buildMapInternal(capacity: Int, builderAction: MutableMap<K, V>().-> Unit): Map<K, V> {\n return LinkedHashMap<K, V>(capacity).apply(builderAction).build()\n}\n\n/**\n * Fills the list with the provided [value].\n * Each element in the list gets replaced with the [value].\n */\n@SinceKotlin("1.2")\npublic actual fun <T> MutableList<T>.fill(value: T): Unit {\n for (index in 0..lastIndex) {\n this[index] = value\n }\n}\n\n/**\n * Randomly shuffles elements in this list.\n * See: https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n */\n@SinceKotlin("1.2")\npublic actual fun <T> MutableList<T>.shuffle(): Unit = shuffle(Random)\n\n/**\n * Returns a new list with the elements of this list randomly shuffled.\n */\n@SinceKotlin("1.2")\npublic actual fun <T> Iterable<T>.shuffled(): List<T> = toMutableList().apply { shuffle() }\n\n/**\n * Sorts elements in the list in-place according to their natural sort order.\n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * @sample samples.collections.Collections.Sorting.sortMutableList\n */\npublic actual fun <T : Comparable<T>> MutableList<T>.sort(): Unit {\n collectionsSort(this, naturalOrder())\n}\n\n/**\n * Sorts elements in the list in-place according to the order specified with [comparator].\n * The sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * @sample samples.collections.Collections.Sorting.sortMutableListWith\n */\npublic actual fun <T> MutableList<T>.sortWith(comparator: Comparator<in T>): Unit {\n collectionsSort(this, comparator)\n}\n\nprivate fun <T> collectionsSort(list: MutableList<T>, comparator: Comparator<in T>) {\n if (list.size <= 1) return\n val array = copyToArray(list)\n sortArrayWith(array, comparator)\n for (i in 0 until array.size) {\n list[i] = array[i]\n }\n}\n\ninternal actual fun <T> arrayOfNulls(reference: Array<T>, size: Int): Array<T> {\n return arrayOfNulls<Any>(size).unsafeCast<Array<T>>()\n}\n\n@SinceKotlin("1.3")\n@PublishedApi\n@JsName("arrayCopy")\ninternal fun <T> arrayCopy(source: Array<out T>, destination: Array<in T>, destinationOffset: Int, startIndex: Int, endIndex: Int) {\n AbstractList.checkRangeIndexes(startIndex, endIndex, source.size)\n val rangeSize = endIndex - startIndex\n AbstractList.checkRangeIndexes(destinationOffset, destinationOffset + rangeSize, destination.size)\n if (arrayBufferIsView(destination) && arrayBufferIsView(source)) {\n val subrange = source.asDynamic().subarray(startIndex, endIndex)\n destination.asDynamic().set(subrange, destinationOffset)\n } else {\n if (source !== destination || destinationOffset <= startIndex) {\n for (index in 0 until rangeSize) {\n destination[destinationOffset + index] = source[startIndex + index]\n }\n } else {\n for (index in rangeSize - 1 downTo 0) {\n destination[destinationOffset + index] = source[startIndex + index]\n }\n }\n }\n}\n\n// no singleton map implementation in js, return map as is\n@Suppress("NOTHING_TO_INLINE")\ninternal

```

```

actual inline fun <K, V> Map<K, V>.toSingletonMapOrSelf(): Map<K, V> =
this\n\n@Suppress("NOTHING_TO_INLINE")\ninternal actual inline fun <K, V> Map<out K,
V>.toSingletonMap(): Map<K, V> = this.toMutableMap()\n\n\n@Suppress("NOTHING_TO_INLINE")\ninternal
actual inline fun <T> Array<out T>.copyToArrayOfAny(isVarargs: Boolean): Array<out Any?> =\n if
(isVarargs)\n // no need to copy vararg array in JS\n this\n else\n
this.copyOfOf()\n\n\n\n@PublishedApi\ninternal actual fun checkIndexOverflow(index: Int): Int {\n if (index < 0)
{\n throwIndexOverflow()\n }\n return index\n}\n\n\n@PublishedApi\ninternal actual fun
checkCountOverflow(count: Int): Int {\n if (count < 0) {\n throwCountOverflow()\n }\n return
count\n}\n\n\n/**\n * JS map and set implementations do not make use of capacities or load factors.\n
\n\n@PublishedApi\ninternal actual fun mapCapacity(expectedSize: Int) = expectedSize\n\n/**\n
* Checks a collection builder function capacity argument.\n * In JS no validation is made in Map/Set constructor
yet.\n *\n*\n@SinceKotlin("1.3")\n@PublishedApi\ninternal fun checkBuilderCapacity(capacity: Int) {\n
require(capacity >= 0) { "capacity must be non-negative." }\n}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n
\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n/**\n * Returns the given iterator itself. This allows to use an instance of iterator in a `for`
loop.\n * @sample samples.collections.Iterators.iterator\n *\n*\n@kotlin.internal.InlineOnly\npublic inline operator
fun <T> Iterator<T>.iterator(): Iterator<T> = this\n\n/**\n * Returns an [Iterator] that wraps each element produced
by the original iterator\n * into an [IndexedValue]
containing the index of that element and the element itself.\n *\n * @sample
samples.collections.Iterators.withIndexIterator\n *\npublic fun <T> Iterator<T>.withIndex():
Iterator<IndexedValue<T>> = IndexingIterator(this)\n\n/**\n * Performs the given [operation] on each element of
this [Iterator].\n * @sample samples.collections.Iterators.forEachIterator\n *\npublic inline fun <T>
Iterator<T>.forEach(operation: (T) -> Unit): Unit {\n for (element in this) operation(element)\n}\n\n/**\n *
Iterator transforming original `iterator` into iterator of [IndexedValue], counting index from zero.\n *\n\ninternal class
IndexingIterator<out T>(private val iterator: Iterator<T>) : Iterator<IndexedValue<T>> {\n private var index =
0\n final override fun hasNext(): Boolean = iterator.hasNext()\n final override fun next(): IndexedValue<T> =
IndexedValue(checkIndexOverflow(index++), iterator.next())\n}\n\n", /*\n * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("ComparisonsKt")\n\npackage
kotlin.comparisons\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns the
greater of two values.\n * \n * If values are equal, returns the first one.\n *\n*\n@SinceKotlin("1.1")\npublic expect
fun <T : Comparable<T>> maxOf(a: T, b: T): T\n\n/**\n * Returns the greater of two values.\n
\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Byte, b: Byte):
Byte\n\n/**\n * Returns the greater of two values.\n *\n*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic
expect inline fun maxOf(a: Short, b: Short): Short\n\n/**\n * Returns the greater of two values.\n
\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic
expect inline fun maxOf(a: Int, b: Int): Int\n\n/**\n * Returns the greater of two values.\n
\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Long, b: Long):
Long\n\n/**\n * Returns the greater of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n
\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Float, b: Float):
Float\n\n/**\n * Returns the greater of two values.\n * \n * If either value is `NaN`, returns `NaN`.\n
\n\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic expect inline fun maxOf(a: Double, b: Double):
Double\n\n/**\n * Returns the greater of three values.\n * \n * If there are multiple equal maximal values, returns the
first of them.\n *\n*\n@SinceKotlin("1.1")\npublic expect fun <T : Comparable<T>> maxOf(a: T, b: T, c: T):

```

`T` Returns the greater of three values.  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`expect inline fun maxOf(a: Byte, b: Byte, c: Byte): Byte`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`expect inline fun maxOf(a: Short, b: Short, c: Short): Short`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`expect inline fun maxOf(a: Int, b: Int, c: Int): Int`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`expect inline fun maxOf(a: Long, b: Long, c: Long): Long`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`expect inline fun maxOf(a: Float, b: Float, c: Float): Float`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`expect inline fun maxOf(a: Double, b: Double, c: Double): Double`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`expect fun maxOf(a: Byte, vararg other: Byte): Byte`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`expect fun maxOf(a: Short, vararg other: Short): Short`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`expect fun maxOf(a: Int, vararg other: Int): Int`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`expect fun maxOf(a: Long, vararg other: Long): Long`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`expect fun maxOf(a: Float, vararg other: Float): Float`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`expect fun maxOf(a: Double, vararg other: Double): Double`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> maxOf(a: T, b: T, c: T, comparator: Comparator<in T>): T`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> maxOf(a: T, b: T, comparator: Comparator<in T>): T`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> maxOf(a: T, vararg other: T): T`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> maxOf(a: T, vararg other: T, comparator: Comparator<in T>): T`  
`*\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: T, b: T): T`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: Byte, b: Byte): Byte`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: Short, b: Short): Short`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: Int, b: Int): Int`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: Long, b: Long): Long`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: Float, b: Float): Float`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: Double, b: Double): Double`  
`*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic`  
`fun <T> minOf(a: T, b: T, c: T): T`



```

*^@SinceKotlin("1.1")^@kotlin.internal.InlineOnly^public expect inline fun minOf(a: Byte, b: Byte, c: Byte):
Byte\n/**\n * Returns the smaller of three values.\n
*^@SinceKotlin("1.1")^@kotlin.internal.InlineOnly^public
expect inline fun minOf(a: Short, b: Short, c: Short): Short\n/**\n * Returns the smaller of three values.\n
*^@SinceKotlin("1.1")^@kotlin.internal.InlineOnly^public expect inline fun minOf(a: Int, b: Int, c: Int):
Int\n/**\n * Returns the smaller of three values.\n *^@SinceKotlin("1.1")^@kotlin.internal.InlineOnly^public
expect inline fun minOf(a: Long, b: Long, c: Long): Long\n/**\n * Returns the smaller of three values.\n * \n * If
any value is `NaN`, returns `NaN`.\n *^@SinceKotlin("1.1")^@kotlin.internal.InlineOnly^public expect inline
fun minOf(a: Float, b: Float, c: Float): Float\n/**\n * Returns the smaller of three values.\n * \n * If any
value is `NaN`, returns `NaN`.\n *^@SinceKotlin("1.1")^@kotlin.internal.InlineOnly^public expect inline fun
minOf(a: Double, b: Double, c: Double): Double\n/**\n * Returns the smaller of three values according to the
order specified by the given [comparator].\n * \n * If there are multiple equal
minimal values, returns the first of them.\n *^@SinceKotlin("1.1")^public fun <T> minOf(a: T, b: T, c: T,
comparator: Comparator<in T>): T {\n return minOf(a, minOf(b, c, comparator), comparator)\n}\n/**\n *
Returns the smaller of two values according to the order specified by the given [comparator].\n * \n * If values
are equal, returns the first one.\n *^@SinceKotlin("1.1")^public fun <T> minOf(a: T, b: T, comparator:
Comparator<in T>): T {\n return if (comparator.compare(a, b) <= 0) a else b\n}\n/**\n * Returns the smaller
of the given values.\n * \n * If there are multiple equal minimal values, returns the first of them.\n
*^@SinceKotlin("1.4")^public expect fun <T : Comparable<T>> minOf(a: T, vararg other: T): T\n/**\n *
Returns the smaller of the given values.\n *^@SinceKotlin("1.4")^public expect fun minOf(a: Byte, vararg
other: Byte): Byte\n/**\n * Returns the smaller of the given values.\n *^@SinceKotlin("1.4")^public expect
fun minOf(a:
Short, vararg other: Short): Short\n/**\n * Returns the smaller of the given values.\n
*^@SinceKotlin("1.4")^public expect fun minOf(a: Int, vararg other: Int): Int\n/**\n * Returns the smaller
of the given values.\n *^@SinceKotlin("1.4")^public expect fun minOf(a: Long, vararg other: Long):
Long\n/**\n * Returns the smaller of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n
*^@SinceKotlin("1.4")^public expect fun minOf(a: Float, vararg other: Float): Float\n/**\n * Returns the
smaller of the given values.\n * \n * If any value is `NaN`, returns `NaN`.\n *^@SinceKotlin("1.4")^public
expect fun minOf(a: Double, vararg other: Double): Double\n/**\n * Returns the smaller of the given values
according to the order specified by the given [comparator].\n * \n * If there are multiple equal minimal
values, returns the first of them.\n *^@SinceKotlin("1.4")^public fun <T> minOf(a: T, vararg other: T,
comparator:
Comparator<in T>): T {\n var
min = a\n for (e in other) if (comparator.compare(min, e) > 0) min = e\n return min\n}\n/**\n * Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*^@file:kotlin.jvm.JvmMultifileClass^@file:kotlin.jvm.JvmName("MapsKt")^package
kotlin.collections\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n//\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n/**\n * Returns the first non-null value produced by
[transform] function being applied to entries of this map in iteration order,\n * or throws
[NoSuchElementException] if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n
*^@SinceKotlin("1.5")^@kotlin.internal.InlineOnly^public
inline fun <K, V, R : Any> Map<out K, V>.firstNotNullOf(transform: (Map.Entry<K, V>) -> R?): R {\n return
firstNotNullOfOrNull(transform) ?: throw NoSuchElementException("No element of the map was transformed to a
non-null value.")\n}\n/**\n * Returns the first non-null value produced by [transform] function being applied
to entries of this map in iteration order,\n * or `null` if no non-null value was produced.\n * \n * @sample
samples.collections.Collections.Transformations.firstNotNullOf\n

```

```

*

@SinceKotlin("1.5")

@kotlin.internal.InlineOnly

public inline fun <K, V, R : Any> Map<out K, V>.firstNotNullOrNull(transform: (Map.Entry<K, V>) -> R?): R? {

 for (element in this) {

 val result = transform(element)

 if (result != null) {

 return result

 }

 }

 return null

}
Returns a [List] containing all key-value pairs.
*

public fun <K, V> Map<out K, V>.toList(): List<Pair<K, V>> {

 if (size == 0)

 return emptyList()

 val iterator = entries.iterator()

 if (!iterator.hasNext())

 return emptyList()

 val first = iterator.next()

 if (!iterator.hasNext())

 return listOf(first.toPair())

 val result = ArrayList<Pair<K, V>>(size)

 result.add(first.toPair())

 do {

 result.add(iterator.next().toPair())

 }

 while (iterator.hasNext())

 return result

}
Returns a single list of all elements yielded from results of [transform] function being invoked on each entry of original map.
*

@sample

samples.collections.maps.transformations.flatMap

*

public inline fun <K, V, R> Map<out K, V>.flatMap(transform: (Map.Entry<K, V>) -> Iterable<R>): List<R> {

 return flatMapTo(ArrayList<R>(), transform)

}
Returns a single list of all elements yielded from results of [transform] function being invoked on each entry of original map.
*

@sample

samples.collections.collections.transformations.flatMap

*

@SinceKotlin("1.4")

@OptIn(kotlin.experimental.ExperimentalTypeInference::class)

@OverloadResolutionByLambdaReturnType

@kotlin.jvm.JvmName("flatMapSequence")

public inline fun <K, V, R> Map<out K, V>.flatMap(transform: (Map.Entry<K, V>) -> Sequence<R>): List<R> {

 return flatMapTo(ArrayList<R>(), transform)

}
Appends all elements yielded from results of [transform] function being invoked on each entry of original map, to the given [destination].
*

public inline fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.flatMapTo(destination: C, transform: (Map.Entry<K, V>) -> Iterable<R>): C {

 for (element in this) {

 val list = transform(element)

 destination.addAll(list)

 }

 return destination

}
Appends all elements yielded from results of [transform] function being invoked on each entry of original map, to the given [destination].
*

@SinceKotlin("1.4")

@OptIn(kotlin.experimental.ExperimentalTypeInference::class)

@OverloadResolutionByLambdaReturnType

@kotlin.jvm.JvmName("flatMapSequenceTo")

public inline fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.flatMapTo(destination: C, transform: (Map.Entry<K, V>) -> Sequence<R>): C {

 for (element in this) {

 val list = transform(element)

 destination.addAll(list)

 }

 return destination

}
Returns a list containing the results of applying the given [transform] function to each entry in the original map.
*

@sample

samples.collections.maps.transformations.mapToList

*

public inline fun <K, V, R> Map<out K, V>.map(transform: (Map.Entry<K, V>) -> R): List<R> {

 return mapTo(ArrayList<R>(size), transform)

}
Returns a list containing only the non-null results of applying the given [transform] function to each entry in the original map.
*

@sample

samples.collections.maps.transformations.mapNotNull

*

public inline fun <K, V, R : Any> Map<out K, V>.mapNotNull(transform: (Map.Entry<K, V>) -> R?): List<R> {

 return mapNotNullTo(ArrayList<R>(), transform)

}
Applies the given [transform] function to each entry in the original map and appends only the non-null results to the given [destination].
*

public inline fun <K, V, R : Any, C : MutableCollection<in R>> Map<out K, V>.mapNotNullTo(destination: C, transform: (Map.Entry<K, V>) -> R?): C {

 forEach { element -> transform(element)?.let { destination.add(it) } }

 return destination

}
Applies the given [transform] function to each entry of the original map and appends the results to the given [destination].
*

public inline fun <K, V, R, C : MutableCollection<in R>> Map<out K, V>.mapTo(destination: C, transform: (Map.Entry<K, V>) -> R): C {

 for (item in this)

 destination.add(transform(item))

 return destination

}
Returns `true` if all entries match the given [predicate].
*

Note that if the map contains no entries, the function returns `true` because there are no entries in it that _do not_ match the predicate.
*

See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.
*

@sample

samples.collections.collections.aggregates.all

*

public inline fun <K, V> Map<out K, V>.all(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {

 if (isEmpty())

 return true

 for (element in this)

```

```

if (!predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if map has at least one entry.\n * \n *\n * @sample samples.collections.Collections.Aggregates.any\n * ^\npublic fun <K, V> Map<out K, V>.any(): Boolean\n {\n return !isEmpty()\n}\n\n/**\n * Returns `true` if at least one entry matches the given [predicate].\n * \n *\n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n * ^\npublic inline fun <K, V> Map<out K, V>.any(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {\n if (isEmpty())\n return false\n for (element in this) if (predicate(element)) return true\n return false\n}\n\n/**\n * Returns the number of entries in this map.\n * ^\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.count(): Int {\n return size\n}\n\n/**\n * Returns the number of entries matching the given [predicate].\n * ^\npublic inline fun <K, V> Map<out K, V>.count(predicate: (Map.Entry<K, V>) -> Boolean): Int {\n if (isEmpty()) return 0\n var count = 0\n for (element in this) if (predicate(element)) ++count\n return count\n}\n\n/**\n * Performs the given [action] on each entry.\n * ^\n@kotlin.internal.HidesMembers\npublic inline fun <K, V> Map<out K, V>.forEach(action: (Map.Entry<K, V>) -> Unit): Unit {\n for (element in this) action(element)\n}\n\n/**\n * Returns the first entry yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the map is empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n * ^\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow")\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <K, V, R : Comparable<R>> Map<out K, V>.maxBy(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V> {\n return entries.maxBy(selector)\n}\n\n/**\n * Returns the first entry yielding the largest value of the given function or `null` if there are no entries.\n * \n *\n * @sample samples.collections.Collections.Aggregates.maxByOrNull\n * ^\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out K, V>.maxByOrNull(selector: (Map.Entry<K, V>) -> R): Map.Entry<K, V>? {\n return entries.maxByOrNull(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the map is empty.\n * ^\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.maxOf(selector: (Map.Entry<K, V>) -> Double): Double {\n return entries.maxOf(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each entry in the map.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the map is empty.\n * ^\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.maxOf(selector: (Map.Entry<K, V>) -> Float): Float {\n return entries.maxOf(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each entry in the map or `null` if there are no entries.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * ^\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V, R : Comparable<R>> Map<out K, V>.maxOf(selector: (Map.Entry<K, V>) -> R): R {\n return entries.maxOf(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each entry in the map or `null` if there are no entries.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * ^\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K, V>.maxOfOrNull(selector: (Map.Entry<K, V>) -> Double): Double? {\n return entries.maxOfOrNull(selector)\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each entry in the map or `null` if there are no entries.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * ^\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

```



```

*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <K, V> Map<out K, V>.minOf(selector:
(Map.Entry<K, V>) -> Float): Float {n return entries.minOf(selector)n}n/n/**n * Returns the smallest value
among all values produced by [selector]
functionn * applied to each entry in the map.n * n * @throws NoSuchElementException if the map is empty.n
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <K, V, R : Comparable<R>> Map<out K,
V>.minOf(selector: (Map.Entry<K, V>) -> R): R {n return entries.minOf(selector)n}n/n/**n * Returns the
smallest value among all values produced by [selector] functionn * applied to each entry in the map or `null` if
there are no entries.n * n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.n
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <K, V> Map<out K,
V>.minOrNull(selector: (Map.Entry<K, V>) -> Double): Double? {n return
entries.minOrNull(selector)n}n/n/**n * Returns the smallest
value among all values produced by [selector] functionn * applied to each entry in the map or `null` if there are no
entries.n * n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.n
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <K, V> Map<out K,
V>.minOrNull(selector: (Map.Entry<K, V>) -> Float): Float? {n return
entries.minOrNull(selector)n}n/n/**n * Returns the smallest value among all values produced by [selector]
functionn * applied to each entry in the map or `null` if there are no entries.n
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <K, V, R : Comparable<R>> Map<out K,
V>.minOrNull(selector: (Map.Entry<K, V>) -> R): R? {n return entries.minOrNull(selector)n}n/n/**n
* Returns the smallest value according to the provided [comparator]n * among all values produced by [selector]
function applied to each entry in the map.n * n * @throws NoSuchElementException if the map is empty.n
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <K, V, R> Map<out K,
V>.minWith(comparator: Comparator<in R>, selector: (Map.Entry<K, V>) -> R): R {n return
entries.minWith(comparator, selector)n}n/n/**n * Returns the smallest value according to the provided
[comparator]n * among all values produced by [selector] function applied to each entry in the map or `null` if there
are no entries.n
*\/n@SinceKotlin("1.4")n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)n@OverloadResolution
ByLambdaReturnTypen@kotlin.internal.InlineOnlynpublic inline fun <K, V, R> Map<out K,
V>.minWithOrNull(comparator: Comparator<in
R>, selector: (Map.Entry<K, V>) -> R): R? {n return entries.minWithOrNull(comparator,
selector)n}n/n/**n * Returns the first entry having the smallest value according to the provided [comparator].n *
n * @throws NoSuchElementException if the map is empty.n
*\/n@SinceKotlin("1.7")n@kotlin.jvm.JvmName("minWithOrThrow")n@kotlin.internal.InlineOnlyn@Suppress
("CONFLICTING_OVERLOADS")npublic inline fun <K, V> Map<out K, V>.minWith(comparator:
Comparator<in Map.Entry<K, V>>): Map.Entry<K, V> {n return entries.minWith(comparator)n}n/n/**n *
Returns the first entry having the smallest value according to the provided [comparator] or `null` if there are no
entries.n
*\/n@SinceKotlin("1.4")n@kotlin.internal.InlineOnlynpublic inline fun <K, V> Map<out K,
V>.minWithOrNull(comparator: Comparator<in Map.Entry<K, V>>): Map.Entry<K, V>? {n return
entries.minWithOrNull(comparator)n}n/n/**n * Returns `true` if the map has no entries.n * n * @sample
samples.collections.Collections.Aggregates.none.n
*\/npublic fun <K, V> Map<out K, V>.none(): Boolean {n return isEmpty()n}n/n/**n * Returns `true` if no
entries match the given [predicate].n * n * @sample

```

```

samples.collections.Collections.Aggregates.noneWithPredicate\n */\npublic inline fun <K, V> Map<out K,
V>.none(predicate: (Map.Entry<K, V>) -> Boolean): Boolean {\n if (isEmpty()) return true\n for (element in
this) if (predicate(element)) return false\n return true\n}\n\n/**\n * Performs the given [action] on each entry and
returns the map itself afterwards.\n */\n@SinceKotlin("1.1")\npublic inline fun <K, V, M : Map<out K, V>>
M.onEach(action: (Map.Entry<K, V>) -> Unit): M {\n return apply { for (element in this) action(element)
}\n}\n\n/**\n * Performs the given [action] on each entry, providing sequential index with the entry,\n * and returns
the map itself afterwards.\n * @param [action] function that takes the index of an entry and the entry itself\n * and
performs
the action on the entry.\n */\n@SinceKotlin("1.4")\npublic inline fun <K, V, M : Map<out K, V>>
M.onEachIndexed(action: (index: Int, Map.Entry<K, V>) -> Unit): M {\n return apply {
entries.forEachIndexed(action) }\n}\n\n/**\n * Creates an [Iterable] instance that wraps the original map returning
its entries when being iterated.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <K, V> Map<out K,
V>.asIterable(): Iterable<Map.Entry<K, V>> {\n return entries\n}\n\n/**\n * Creates a [Sequence] instance that
wraps the original map returning its entries when being iterated.\n */\npublic fun <K, V> Map<out K,
V>.asSequence(): Sequence<Map.Entry<K, V>> {\n return entries.asSequence()\n}\n\n"/\n\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE:
THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n\n//
See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n// 10 mappings totally\n\ninternal fun
Char.titlecaseImpl(): String {\n val uppercase = uppercase()\n if (uppercase.length > 1) {\n return if (this ==
"\u0149') uppercase else uppercase[0] + uppercase.substring(1).lowercase()\n }\n return
titlecaseChar().toString()\n}\n\n"/\n\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/**\n * Converts this character to lower case using Unicode
mapping rules of the invariant locale.\n */\n@Deprecated("Use lowercaseChar() instead.")\nReplaceWith("lowercaseChar()")\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun Char.toLowerCase(): Char =
lowercaseChar()\n\n/**\n * Converts this character to lower
case using Unicode mapping rules of the invariant locale.\n * This function performs one-to-one character
mapping.\n * To support one-to-many character mapping use the [lowercase] function.\n * If this character has no
mapping equivalent, the character itself is returned.\n * @sample samples.text.Chars.lowercase\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c actual inline fun Char.lowercaseChar(): Char = lowercase()[0]\n\n/**\n * Converts this character to lower case
using Unicode mapping rules of the invariant locale.\n * This function supports one-to-many character mapping,
thus the length of the returned string can be greater than one.\n * For example, ``\u0130'.lowercase()`` returns
``\u0069\u0307``,\n * where ``\u0130`` is the LATIN CAPITAL LETTER I WITH DOT ABOVE character
(`\u0130`).\n * If this character has no lower case mapping, the result of `toString()` of this char is returned.\n
*/\n * @sample samples.text.Chars.lowercase\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npubli
c actual inline fun Char.lowercase(): String = toString().asDynamic().toLowerCase().unsafeCast<String>()\n\n/**\n
 * Converts this character to upper case using Unicode mapping rules of the invariant locale.\n
*/\n@Deprecated("Use uppercaseChar() instead.")\nReplaceWith("uppercaseChar()")\n@DeprecatedSinceKotlin(warningSince =
"1.5")\n@kotlin.internal.InlineOnly\npublic actual inline fun Char.toUpperCase(): Char =
uppercaseChar()\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the invariant
locale.\n * This function performs one-to-one character mapping.\n * To support one-to-many character
mapping use the [uppercase] function.\n * If this character has no mapping equivalent, the character itself is
returned.\n * @sample samples.text.Chars.uppercase\n
*/

```

```

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalStdlibApi::class)^npublic
actual fun Char.uppercaseChar(): Char {^n val uppercase = uppercase()^n return if (uppercase.length > 1) this
else uppercase[0]^n}^n/n/**^n * Converts this character to upper case using Unicode mapping rules of the invariant
locale.^n *^n * This function supports one-to-many character mapping, thus the length of the returned string can be
greater than one.^n * For example, `'\uFB00'.uppercase()` returns `'\u0046\u0046'`,^n * where `'\uFB00` is the
LATIN SMALL LIGATURE FF character (`\ufb00`).^n * If this character has no upper case mapping, the result of
`toString()` of this char is returned.^n *^n * @sample samples.text.Chars.uppercase^n
*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalStdlibApi::class)^n@kotlin.internal.InlineOnly^npubli
c actual inline fun Char.uppercase(): String = toString().asDynamic().toUpperCase().unsafeCast<String>()^n/n/**^n
* Converts this character to title case using Unicode mapping rules of the invariant
locale.^n *^n * This function performs one-to-one character mapping.^n * To support one-to-many character
mapping use the [titlecase] function.^n * If this character has no mapping equivalent, the result of calling
[uppercaseChar] is returned.^n *^n * @sample samples.text.Chars.titlecase^n
*^@SinceKotlin("1.5")^npublic
actual fun Char.titlecaseChar(): Char = titlecaseCharImpl()^n/n/**^n * Returns `true` if this character is a Unicode
high-surrogate code unit (also known as leading-surrogate code unit).^n
*^@npublic actual fun
Char.isHighSurrogate(): Boolean = this in
Char.MIN_HIGH_SURROGATE..Char.MAX_HIGH_SURROGATE^n/n/**^n * Returns `true` if this character is a
Unicode low-surrogate code unit (also known as trailing-surrogate code unit).^n
*^@npublic actual fun
Char.isLowSurrogate(): Boolean = this in
Char.MIN_LOW_SURROGATE..Char.MAX_LOW_SURROGATE^n/n/**^n * Returns the Unicode general
category of this character.^n
*^@SinceKotlin("1.5")^npublic actual val Char.category:
CharCategory^n get() = CharCategory.valueOf(getCategoryValue())^n/n/**^n * Returns `true` if this character
(Unicode code point) is defined in Unicode.^n *^n * A character is considered to be defined in Unicode if its
[category] is not [CharCategory.UNASSIGNED].^n
*^@SinceKotlin("1.5")^npublic actual fun Char.isDefined():
Boolean {^n if (this < '\u0080') {^n return true^n }^n return getCategoryValue() !=
CharCategory.UNASSIGNED.value^n}^n/n/**^n * Returns `true` if this character is a letter.^n *^n * A character is
considered to be a letter if its [category] is [CharCategory.UPPERCASE_LETTER],^n *
[CharCategory.LOWERCASE_LETTER], [CharCategory.TITLECASE_LETTER],
[CharCategory.MODIFIER_LETTER], or [CharCategory.OTHER_LETTER].^n *^n * @sample
samples.text.Chars.isLetter^n
*^@SinceKotlin("1.5")^npublic actual fun Char.isLetter(): Boolean {^n if (this in
'a..'z' || this in 'A..'Z') {^n return true^n }^n if (this < '\u0080') {^n return false^n
 }^n return isLetterImpl()^n}^n/n/**^n * Returns `true` if this character is a letter or digit.^n *^n * @see isLetter^n
* @see isDigit^n *^n * @sample samples.text.Chars.isLetterOrDigit^n
*^@SinceKotlin("1.5")^npublic actual fun
Char.isLetterOrDigit(): Boolean {^n if (this in 'a..'z' || this in 'A..'Z' || this in '0..'9') {^n return true^n }^n if
(this < '\u0080') {^n return false^n }^n return isDigitImpl() || isLetterImpl()^n}^n/n/**^n * Returns `true` if
this character is a digit.^n *^n * A character is considered to be a digit if its [category] is
[CharCategory.DECIMAL_DIGIT_NUMBER].^n *^n * @sample samples.text.Chars.isDigit^n
*^@SinceKotlin("1.5")^npublic actual fun Char.isDigit(): Boolean {^n if (this in '0..'9') {^n return true^n
 }^n if (this < '\u0080') {^n return false^n }^n return isDigitImpl()^n}^n/n/**^n * Returns `true` if this
character is upper case.^n *^n * A character is considered to
be an upper case character if its [category] is [CharCategory.UPPERCASE_LETTER],^n * or it has contributory
property `Other_Uppercase` as defined by the Unicode Standard.^n *^n * @sample
samples.text.Chars.isUpperCase^n
*^@SinceKotlin("1.5")^npublic actual fun Char.isUpperCase(): Boolean {^n if (this in 'A..'Z') {^n return true^n
 }^n if (this < '\u0080') {^n return false^n }^n return
isUpperCaseImpl()^n}^n/n/**^n * Returns `true` if this character is lower case.^n *^n * A character is considered to
be a lower case character if its [category] is [CharCategory.LOWERCASE_LETTER],^n * or it has contributory
property `Other_Lowercase` as defined by the Unicode Standard.^n *^n * @sample
samples.text.Chars.isLowerCase^n
*^@SinceKotlin("1.5")^npublic actual fun Char.isLowerCase(): Boolean {^n

```

```

if (this in 'a'..'z') {\n return true\n } \n if (this < '\u0080') {\n return false\n } \n return
isLowerCaseImpl()\n}\n\n/**\n * Returns
`true` if this character is a title case letter.\n *\n * A character is considered to be a title case letter if its [category] is
[CharCategory.TITLECASE_LETTER].\n *\n * @sample samples.text.Chars.isTitleCase
*\n\n@SinceKotlin("1.5")\npublic actual fun Char.isTitleCase(): Boolean {\n if (this < '\u0080') {\n return
false\n } \n return getCategoryValue() == CharCategory.TITLECASE_LETTER.value\n}\n\n/**\n * Returns
`true` if this character is an ISO control character.\n *\n * A character is considered to be an ISO control character if
its [category] is [CharCategory.CONTROL],\n * meaning the Char is in the range ``\u0000'..' \u001F`` or in the
range ``\u007F'..' \u009F``.\n *\n * @sample samples.text.Chars.isISOControl\n *\n\n@SinceKotlin("1.5")\npublic
actual fun Char.isISOControl(): Boolean {\n return this <= '\u001F' || this in '\u007F'..' \u009F'\n}\n\n/**\n *
Determines whether a character is whitespace according to the Unicode standard.\n * Returns `true`
if the character is whitespace.\n *\n * @sample samples.text.Chars.isWhitespace\n *\n\npublic actual fun
Char.isWhitespace(): Boolean = isWhitespaceImpl()\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n\npackage kotlin.text\nimport kotlin.js.RegExp\n\n/**\n * Converts
the characters in the specified array to a string.\n *\n\n@SinceKotlin("1.2")\n@Deprecated("Use
CharArray.concatToString() instead",
ReplaceWith("chars.concatToString()"))\n@DeprecatedSinceKotlin(warningSince = "1.4", errorSince =
"1.5")\npublic actual fun String(chars: CharArray): String {\n var result = ""\n for (char in chars) {\n
result += char\n } \n return result\n}\n\n/**\n * Converts the characters from a portion of the specified array to a
string.\n *\n * @throws IndexOutOfBoundsException if either [offset] or [length]
are less than zero\n * or `offset + length` is out of [chars] array bounds.\n
*\n\n@SinceKotlin("1.2")\n@Deprecated("Use CharArray.concatToString(startIndex, endIndex) instead",
ReplaceWith("chars.concatToString(offset, offset + length)"))\n@DeprecatedSinceKotlin(warningSince = "1.4",
errorSince = "1.5")\npublic actual fun String(chars: CharArray, offset: Int, length: Int): String {\n if (offset < 0 ||
length < 0 || chars.size - offset < length)\n throw IndexOutOfBoundsException("size: ${chars.size}; offset:
$offset; length: $length")\n var result = ""\n for (index in offset until offset + length) {\n result +=
chars[index]\n } \n return result\n}\n\n/**\n * Concatenates characters in this [CharArray] into a String.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
CharArray.concatToString(): String {\n var result = ""\n for (char in this) {\n result += char\n } \n
return result\n}\n\n/**\n * Concatenates characters in this [CharArray] or its subrange into a String.\n *\n * @param startIndex the
beginning (inclusive) of the subrange of characters, 0 by default.\n * @param endIndex the end (exclusive) of the
subrange of characters, size of this array by default.\n *\n * @throws IndexOutOfBoundsException if [startIndex] is
less than zero or [endIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[startIndex] is greater than [endIndex].\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual fun CharArray.concatToString(startIndex: Int = 0,
endIndex: Int = this.size): String {\n AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)\n var
result = ""\n for (index in startIndex until endIndex) {\n result += this[index]\n } \n return
result\n}\n\n/**\n * Returns a [CharArray] containing characters of this string.\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun
String.toCharArray(): CharArray {\n return CharArray(length) { get(it) }\n}\n\n/**\n * Returns a [CharArray]
containing characters of this string or its substring.\n *\n * @param startIndex the beginning (inclusive) of the
substring, 0 by default.\n * @param endIndex the end (exclusive) of the substring, length of this string by default.\n
*\n * @throws IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the length
of this string.\n * @throws IllegalArgumentException if [startIndex] is greater than [endIndex].\n
*\n\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")

```



```

ON_WITH_DEFAULT_ARGUMENTS")\npublic actual fun String.toCharArray(startIndex: Int = 0, endIndex: Int
= this.length): CharArray {\n AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n return
CharArray(endIndex - startIndex)
 {\n get(startIndex + it) }\n}\n\n/**\n * Decodes a string from the bytes in UTF-8 encoding in this array.\n *\n *
Malformed byte sequences are replaced by the replacement char `\\uFFFF`.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public actual fun
ByteArray.decodeToString(): String {\n return decodeUtf8(this, 0, size, false)\n}\n\n/**\n * Decodes a string from
the bytes in UTF-8 encoding in this array or its subrange.\n *\n * @param startIndex the beginning (inclusive) of the
subrange to decode, 0 by default.\n * @param endIndex the end (exclusive) of the subrange to decode, size of this
array by default.\n * @param throwOnInvalidSequence specifies whether to throw an exception on malformed byte
sequence or replace it by the replacement char `\\uFFFF`.\n *\n * @throws IndexOutOfBoundsException if
[startIndex] is less than zero or [endIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [startIndex] is greater than [endIndex].\n
* @throws CharacterCodingException if the byte array contains malformed UTF-8 byte sequence and
[throwOnInvalidSequence] is true.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun ByteArray.decodeToString(\n startIndex: Int = 0,\n
endIndex: Int = this.size,\n throwOnInvalidSequence: Boolean = false\n): String {\n
 AbstractList.checkBoundsIndexes(startIndex, endIndex, this.size)\n return decodeUtf8(this, startIndex, endIndex,
throwOnInvalidSequence)\n}\n\n/**\n * Encodes this string to an array of bytes in UTF-8 encoding.\n *\n * Any
malformed char sequence is replaced by the replacement byte sequence.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n public actual fun
String.encodeToByteArray(): ByteArray {\n return encodeUtf8(this, 0, length, false)\n}\n\n/**\n * Encodes this
string or its substring to an array of bytes in UTF-8 encoding.\n
*\n * @param startIndex the beginning (inclusive) of the substring to encode, 0 by default.\n * @param endIndex
the end (exclusive) of the substring to encode, length of this string by default.\n * @param throwOnInvalidSequence
specifies whether to throw an exception on malformed char sequence or replace.\n *\n * @throws
IndexOutOfBoundsException if [startIndex] is less than zero or [endIndex] is greater than the length of this string.\n
* @throws IllegalArgumentException if [startIndex] is greater than [endIndex].\n * @throws
CharacterCodingException if this string contains malformed char sequence and [throwOnInvalidSequence] is true.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n @Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\n public actual fun String.encodeToByteArray(\n startIndex: Int = 0,\n
endIndex: Int = this.length,\n throwOnInvalidSequence: Boolean = false\n): ByteArray {\n
 AbstractList.checkBoundsIndexes(startIndex,
 endIndex, length)\n return encodeUtf8(this, startIndex, endIndex, throwOnInvalidSequence)\n}\n\n/**\n *
Returns a copy of this string converted to upper case using the rules of the default locale.\n *\n @Deprecated("Use
uppercase() instead.", ReplaceWith("uppercase()"))\n @DeprecatedSinceKotlin(warningSince =
"1.5")\n @kotlin.internal.InlineOnly\n public actual inline fun String.toUpperCase(): String =
asDynamic().toUpperCase()\n\n/**\n * Returns a copy of this string converted to upper case using Unicode mapping
rules of the invariant locale.\n *\n * This function supports one-to-many and many-to-one character mapping,\n *
thus the length of the returned string can be different from the length of the original string.\n *\n * @sample
samples.text.Strings.uppercase\n
*\n @SinceKotlin("1.5")\n @WasExperimental(ExperimentalStdlibApi::class)\n @kotlin.internal.InlineOnly\n public
actual inline fun String.uppercase(): String = asDynamic().toUpperCase()\n\n/**\n * Returns a copy of this
string converted to lower case using the rules of the default locale.\n *\n @Deprecated("Use lowercase() instead.",
ReplaceWith("lowercase()"))\n @DeprecatedSinceKotlin(warningSince =
"1.5")\n @kotlin.internal.InlineOnly\n public actual inline fun String.toLowerCase(): String =
asDynamic().toLowerCase()\n\n/**\n * Returns a copy of this string converted to lower case using Unicode

```

mapping rules of the invariant locale.\n \* This function supports one-to-many and many-to-one character mapping,\n \* thus the length of the returned string can be different from the length of the original string.\n \* @sample samples.text.Strings.lowercase\n

```

*^@SinceKotlin("1.5")^@WasExperimental(ExperimentalStdlibApi::class)^@kotlin.internal.InlineOnly^@npublic
actual inline fun String.lowercase(): String = asDynamic().toLowerCase()\n\n@kotlin.internal.InlineOnly^@ninternal
actual inline fun String.nativeIndexOf(str: String, fromIndex: Int): Int = asDynamic().indexOf(str,
fromIndex)\n\n@kotlin.internal.InlineOnly^@ninternal
actual inline fun String.nativeLastIndexOf(str: String, fromIndex: Int): Int = asDynamic().lastIndexOf(str,
fromIndex)\n\n@kotlin.internal.InlineOnly^@kotlin.js.JsPolyfill("\\\\nif (typeof String.prototype.startsWith ===
'undefined') {\n Object.defineProperty(String.prototype, 'startsWith', {\n value: function (searchString,
position) {\n position = position || 0;\n return this.lastIndexOf(searchString, position) === position;\n
 }\n });\n}\n")^@ninternal inline fun String.nativeStartsWith(s: String, position: Int): Boolean =
asDynamic().startsWith(s, position)\n\n@kotlin.internal.InlineOnly^@kotlin.js.JsPolyfill("\\\\nif (typeof
String.prototype.endsWith === 'undefined') {\n Object.defineProperty(String.prototype, 'endsWith', {\n
value: function (searchString, position) {\n var subjectString = this.toString();\n if (position ===
undefined || position > subjectString.length)
{\n position = subjectString.length;\n }\n position -= searchString.length;\n var
lastIndex = subjectString.indexOf(searchString, position);\n return lastIndex !== -1 && lastIndex ===
position;\n }\n});\n}\n")^@ninternal inline fun String.nativeEndsWith(s: String): Boolean =
asDynamic().endsWith(s)\n\n@kotlin.internal.InlineOnly^@npublic actual inline fun String.substring(startIndex: Int):
String = asDynamic().substring(startIndex)\n\n@kotlin.internal.InlineOnly^@npublic actual inline fun
String.substring(startIndex: Int, endIndex: Int): String = asDynamic().substring(startIndex,
endIndex)\n\n@Deprecated("Use String.plus() instead", ReplaceWith("this +
str"))^@n@DeprecatedSinceKotlin(warningSince = "1.6")^@kotlin.internal.InlineOnly^@npublic inline fun
String.concat(str: String): String = asDynamic().concat(str)\n\n@Deprecated("Use Regex.findAll() instead or
invoke matches() on String dynamically:
this.asDynamic().match(regex)")^@n@DeprecatedSinceKotlin(warningSince =
"1.6")^@kotlin.internal.InlineOnly^@npublic inline fun String.match(regex: String): Array<String>? =
asDynamic().match(regex)\n\n//native public fun String.trim(): String\n//TODO: String.replace to implement
effective trimLeading and trimTrailing\n\n@kotlin.internal.InlineOnly^@ninternal inline fun
String.nativeReplace(pattern: RegExp, replacement: String): String = asDynamic().replace(pattern,
replacement)\n\n/**\n * Compares two strings lexicographically, optionally ignoring case differences.\n * If
[ignoreCase] is true, the result of `Char.toUpperCaseChar().toLowerCaseChar()` on each character is compared.\n
*^@n@SinceKotlin("1.2")^@n@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")^@npublic
actual fun String.compareTo(other: String, ignoreCase: Boolean = false): Int {\n if (ignoreCase) {\n val n1 =
this.length\n val n2 = other.length\n val min = minOf(n1, n2)\n if (min == 0)
return n1 - n2\n for (index in 0 until min) {\n var thisChar = this[index]\n var otherChar =
other[index]\n if (thisChar != otherChar) {\n thisChar = thisChar.toUpperCaseChar()\n
otherChar = otherChar.toUpperCaseChar()\n if (thisChar != otherChar) {\n thisChar =
thisChar.toLowerCaseChar()\n otherChar = otherChar.toLowerCaseChar()\n }\n }
 if (thisChar != otherChar) {\n thisChar =
thisChar.toLowerCaseChar()\n otherChar = otherChar.toLowerCaseChar()\n if (thisChar !=
otherChar) {\n return thisChar.compareTo(otherChar)\n }\n }\n }\n
return n1 - n2\n } else {\n return compareTo(other)\n }\n}\n\n/**\n * Returns `true` if the contents
of this char sequence are equal to the contents of the specified [other],\n * i.e. both char sequences contain the same
number of the same characters in the same order.\n * @sample samples.text.Strings.contentEquals\n
*^@n@SinceKotlin("1.5")^@npublic
actual infix fun CharSequence?.contentEquals(other: CharSequence?): Boolean =
contentEqualsImpl(other)\n\n/**\n * Returns `true` if the contents of this char sequence are equal to the contents of
the specified [other], optionally ignoring case difference.\n * @param ignoreCase `true` to ignore character case

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```
when comparing contents.\n *\n * @sample samples.text.Strings.contentEquals\n *\n@SinceKotlin("1.5")\n\npublic
actual fun CharSequence?.contentEquals(other: CharSequence?, ignoreCase: Boolean): Boolean {\n return if
(ignoreCase)\n this.contentEqualsIgnoreCaseImpl(other)\n else\n this.contentEqualsImpl(other)\n}\n\n\nprivate val STRING_CASE_INSENSITIVE_ORDER = Comparator<String>
{ a, b -> a.compareTo(b, ignoreCase = true) }\n\n@SinceKotlin("1.2")\n\npublic actual val
String.Companion.CASE_INSENSITIVE_ORDER: Comparator<String>\n get() =
STRING_CASE_INSENSITIVE_ORDER\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language
```

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contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
```

```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n\n@file:kotlin.jvm.JvmName("CharsKt")\n\n\npackage kotlin.text\n\n/**\n
```

```
* Returns the numeric value of the decimal digit that this Char represents.\n * Throws an exception if this Char is
not a valid decimal digit.\n *\n * A Char is considered to represent a decimal digit if [isDigit] is true for the Char.\n * In this case, the Unicode decimal digit value of the character is returned.\n *\n * @sample
```

```
samples.text.Chars.digitToInt\n
```

```
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic fun Char.digitToInt(): Int
{\n return digitOf(this, 10).also {\n if (it < 0) throw IllegalArgumentException("Char $this is not a decimal
digit")\n }\n}\n\n/**\n * Returns the numeric value of the digit that this Char represents in the specified [radix].\n * Throws an exception if the [radix]
```

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is not in the range `2..36` or if this Char is not a valid digit in the specified [radix].\n *\n * A Char is considered to
represent a digit in the specified [radix] if at least one of the following is true:\n * - [isDigit] is `true` for the Char
and the Unicode decimal digit value of the character is less than the specified [radix]. In this case the decimal digit
value is returned.\n * - The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix
+ 'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.\n * - The Char is one of the lowercase Latin
letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is
returned.\n * - The Char is one of the fullwidth Latin capital letters "\uFF21" through "\uFF3A" and its [code] is less
than `radix + 0xFF21 - 10`. In this case, `this.code - 0xFF21 + 10` is returned.\n * - The Char is one of the fullwidth
Latin small letters "\uFF41"
```

```
through "\uFF5A" and its [code] is less than `radix + 0xFF41 - 10`. In this case, `this.code - 0xFF41 + 10` is
returned.\n *\n * @sample samples.text.Chars.digitToInt\n
```

```
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic fun Char.digitToInt(radix:
Int): Int {\n return digitToIntOrNull(radix) ?: throw IllegalArgumentException("Char $this is not a digit in the
given radix=$radix")\n}\n\n/**\n * Returns the numeric value of the decimal digit that this Char represents, or
`null` if this Char is not a valid decimal digit.\n *\n * A Char is considered to represent a decimal digit if [isDigit] is
true for the Char.\n * In this case, the Unicode decimal digit value of the character is returned.\n *\n * @sample
samples.text.Chars.digitToIntOrNull\n
```

```
*\n\n@SinceKotlin("1.5")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic fun
```

```
Char.digitToIntOrNull(): Int? {\n return digitOf(this, 10).takeIf { it >= 0 }\n}\n\n/**\n * Returns the numeric
value
```

```
of the digit that this Char represents in the specified [radix], or `null` if this Char is not a valid digit in the specified
[radix].\n * Throws an exception if the [radix] is not in the range `2..36`.\n *\n * A Char is considered to represent a
digit in the specified [radix] if at least one of the following is true:\n * - [isDigit] is `true` for the Char and the
Unicode decimal digit value of the character is less than the specified [radix]. In this case the decimal digit value is
returned.\n * - The Char is one of the uppercase Latin letters 'A' through 'Z' and its [code] is less than `radix +
'A'.code - 10`. In this case, `this.code - 'A'.code + 10` is returned.\n * - The Char is one of the lowercase Latin
letters 'a' through 'z' and its [code] is less than `radix + 'a'.code - 10`. In this case, `this.code - 'a'.code + 10` is
returned.\n * - The Char is one of the fullwidth Latin capital letters "\uFF21" through "\uFF3A" and its [code] is less
than `radix + 0xFF21 - 10`.
```

In this case, ``this.code - 0xFF21 + 10`` is returned.

`\n * - The Char` is one of the fullwidth Latin small letters `'\uFF41'` through `'\uFF5A'` and its `[code]` is less than ``radix + 0xFF41 - 10``. In this case, ``this.code - 0xFF41 + 10`` is returned.

```
\n * @sample samples.text.Chars.digitToIntOrNull\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
Char.digitToIntOrNull(radix: Int): Int? {\n checkRadix(radix)\n return digitOf(this, radix).takeIf { it >= 0
}\n}\n\n/**\n * Returns the Char that represents this decimal digit.\n * Throws an exception if this value is not in the
range `0..9`.\n * If this value is in `0..9`, the decimal digit Char with code `0.code + this` is returned.\n *
@sample samples.text.Chars.digitToChar\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Int.digitToChar(): Char
{\n if (this in 0..9) {\n return '0' + this\n }\n throw IllegalArgumentException("\u0022Int $this
is not a decimal digit\u0022")\n}\n\n/**\n * Returns the Char that represents this numeric digit value in the specified
[radix].\n * Throws an exception if the [radix] is not in the range `2..36` or if this value is not in the range `0` until
radix`.\n * If this value is less than `10`, the decimal digit Char with code `0.code + this` is returned.\n *
Otherwise, the uppercase Latin letter with code `A.code + this - 10` is returned.\n * @sample
samples.text.Chars.digitToChar\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun Int.digitToChar(radix:
Int): Char {\n if (radix !in 2..36) {\n throw IllegalArgumentException("\u0022Invalid radix: $radix. Valid radix
values are in range 2..36\u0022")\n }\n if (this < 0 || this >= radix) {\n throw IllegalArgumentException("\u0022Digit
$this does not represent a valid digit in radix $radix\u0022")\n }\n return if (this < 10) {\n '0' + this\n } else {\n
'A' + this - 10\n }\n}\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the invariant locale.\n
*\n@Deprecated("Use lowercaseChar() instead.")\n
ReplaceWith("lowercaseChar()")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun
Char.toLowerCase(): Char\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the
invariant locale.\n * This function performs one-to-one character mapping.\n * To support one-to-many
character mapping use the [lowercase] function.\n * If this character has no mapping equivalent, the character itself
is returned.\n * @sample samples.text.Chars.lowercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.lowercaseChar(): Char\n\n/**\n * Converts this character to lower case using Unicode mapping rules of the
invariant locale.\n * This function supports one-to-many character mapping, thus the length of the returned
string can be greater than one.\n
* For example, `\u0022\u0027.toLowerCase()` returns `\u0022\u0027\u0027`, where `\u0027` is the LATIN CAPITAL
LETTER I WITH DOT ABOVE character (`\u0027`).\n * If this character has no lower case mapping, the result of
`.toString()` of this char is returned.\n * @sample samples.text.Chars.lowercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.lowercase(): String\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the
invariant locale.\n * @Deprecated("Use uppercaseChar() instead.")\n
ReplaceWith("uppercaseChar()")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic expect fun
Char.toUpperCase(): Char\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the
invariant locale.\n * This function performs one-to-one character mapping.\n * To support one-to-many
character mapping use the [uppercase] function.\n * If this character has no mapping equivalent, the character
itself is returned.\n * @sample samples.text.Chars.uppercase\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.uppercaseChar(): Char\n\n/**\n * Converts this character to upper case using Unicode mapping rules of the
invariant locale.\n * This function supports one-to-many character mapping, thus the length of the returned
string can be greater than one.\n * For example, `\u0022\u0027.toUpperCase()` returns `\u0022\u0027\u0027`, where
`\u0027` is the LATIN SMALL LIGATURE FF character (`\u0027`).\n * If this character has no upper case
mapping, the result of `.toString()` of this char is returned.\n * @sample samples.text.Chars.uppercase\n
```

```

*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun
Char.uppercase(): String\n\n/**\n * Converts this character to title case using Unicode mapping rules of the
invariant locale.\n *\n * This function performs one-to-one character mapping.\n *
To support one-to-many character mapping use the [titlecase] function.\n * If this character has no mapping
equivalent, the result of calling [uppercaseChar] is returned.\n *\n * @sample samples.text.Chars.titlecase()\n
*\n@SinceKotlin("1.5")\npublic expect fun Char.titlecaseChar(): Char\n\n/**\n * Converts this character to title
case using Unicode mapping rules of the invariant locale.\n *\n * This function supports one-to-many character
mapping, thus the length of the returned string can be greater than one.\n * For example, ``\uFB00'.titlecase()``
returns ``\u0046\u0066``,\n * where ``\uFB00`` is the LATIN SMALL LIGATURE FF character (`\ufb00`).\n *
If this character has no title case mapping, the result of [uppercase] is returned instead.\n *\n * @sample
samples.text.Chars.titlecase\n *\n@SinceKotlin("1.5")\npublic fun Char.titlecase(): String =
titlecaseImpl()\n\n/**\n * Concatenates this Char and a String.\n *\n * @sample samples.text.Chars.plus\n
*\n@kotlin.internal.InlineOnly\npublic
inline operator fun Char.plus(other: String): String = this.toString() + other\n\n/**\n * Returns `true` if this
character is equal to the [other] character, optionally ignoring character case.\n *\n * Two characters are considered
equal ignoring case if `Char.uppercaseChar().lowercaseChar()` on each character produces the same result.\n *\n *
@param ignoreCase `true` to ignore character case when comparing characters. By default `false`.\n *\n * @sample
samples.text.Chars.equals\n *\npublic fun Char.equals(other: Char, ignoreCase: Boolean = false): Boolean {\n if
(this == other) return true\n if (!ignoreCase) return false\n\n val thisUpper = this.uppercaseChar()\n val
otherUpper = other.uppercaseChar()\n\n return thisUpper == otherUpper || thisUpper.lowercaseChar() ==
otherUpper.lowercaseChar()\n}\n\n/**\n * Returns `true` if this character is a Unicode surrogate code unit.\n
*\n@public fun Char.isSurrogate(): Boolean = this in Char.MIN_SURROGATE..Char.MAX_SURROGATE\n\n/**\n *
Returns the Unicode general category of this character.\n *\n@SinceKotlin("1.5")\npublic expect val
Char.category: CharCategory\n\n/**\n * Returns `true` if this character (Unicode code point) is defined in
Unicode.\n *\n * A character is considered to be defined in Unicode if its [category] is not
[CharCategory.UNASSIGNED].\n *\n@SinceKotlin("1.5")\npublic expect fun Char.isDefined():
Boolean\n\n/**\n * Returns `true` if this character is a letter.\n *\n * A character is considered to be a letter if its
[category] is [CharCategory.UPPERCASE_LETTER],\n * [CharCategory.LOWERCASE_LETTER],
[CharCategory.TITLECASE_LETTER], [CharCategory.MODIFIER_LETTER], or
[CharCategory.OTHER_LETTER].\n *\n * @sample samples.text.Chars.isLetter\n
*\n@SinceKotlin("1.5")\npublic expect fun Char.isLetter(): Boolean\n\n/**\n * Returns `true` if this character is a
letter or digit.\n *\n * @see isLetter\n * @see isDigit\n *\n * @sample samples.text.Chars.isLetterOrDigit\n
*\n@SinceKotlin("1.5")\npublic
expect fun Char.isLetterOrDigit(): Boolean\n\n/**\n * Returns `true` if this character is a digit.\n *\n * A character
is considered to be a digit if its [category] is [CharCategory.DECIMAL_DIGIT_NUMBER].\n *\n * @sample
samples.text.Chars.isDigit\n *\n@SinceKotlin("1.5")\npublic expect fun Char.isDigit(): Boolean\n\n/**\n *
Returns `true` if this character is upper case.\n *\n * A character is considered to be an upper case character if its
[category] is [CharCategory.UPPERCASE_LETTER],\n * or it has contributory property `Other_Uppercase` as
defined by the Unicode Standard.\n *\n * @sample samples.text.Chars.isUpperCase\n
*\n@SinceKotlin("1.5")\npublic expect fun Char.isUpperCase(): Boolean\n\n/**\n * Returns `true` if this
character is lower case.\n *\n * A character is considered to be a lower case character if its [category] is
[CharCategory.LOWERCASE_LETTER],\n * or it has contributory property `Other_Lowercase` as defined by the
Unicode Standard.\n
*\n * @sample samples.text.Chars.isLowerCase\n *\n@SinceKotlin("1.5")\npublic expect fun
Char.isLowerCase(): Boolean\n\n/**\n * Returns `true` if this character is a title case letter.\n *\n * A character is
considered to be a title case letter if its [category] is [CharCategory.TITLECASE_LETTER].\n *\n * @sample
samples.text.Chars.isTitleCase\n *\n@SinceKotlin("1.5")\npublic expect fun Char.isTitleCase(): Boolean\n\n/**\n *
Returns `true` if this character is an ISO control character.\n *\n * A character is considered to be an ISO control

```

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character if its [category] is [CharCategory.CONTROL],\n * meaning the Char is in the range `\\u0000'..'\\u001F'
or in the range `\\u007F'..'\\u009F'`. \n * \n * @sample samples.text.Chars.isISOControl\n
*\n@SinceKotlin("1.5")\npublic expect fun Char.isISOControl(): Boolean\n\n/**\n * Determines whether a
character is whitespace according to the Unicode standard.\n * Returns `true` if the character is whitespace.\n * \n *
@sample samples.text.Chars.isWhitespace\n
\npublic expect fun Char.isWhitespace(): Boolean\n", "/\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n\npackage kotlin\n\n/**\n * Creates a Char with the specified [code],
or throws an exception if the [code] is out of `Char.MIN_VALUE.code..Char.MAX_VALUE.code`. \n *\n * If the
program that calls this function is written in a way that only valid [code] is passed as the argument,\n * using the
overload that takes a [UShort] argument is preferable (`Char(intValue.toUShort())`). \n * That overload doesn't check
validity of the argument, and may improve program performance when the function is called routinely inside a
loop.\n *\n * @sample samples.text.Chars.charFromCode\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun Char(code:
Int): Char {\n if (code < Char.MIN_VALUE.code || code > Char.MAX_VALUE.code) {\n throw
IllegalArgumentException("Invalid Char code: $code")\n }\n return code.toChar()\n}\n\n/**\n * Creates a Char
with the specified [code].\n *\n * @sample samples.text.Chars.charFromCode\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("NO_ACTUAL_FOR
_EXPECT")\npublic expect fun Char(code: UShort): Char\n\n/**\n * Returns the code of this Char.\n *\n * Code of
a Char is the value it was constructed with, and the UTF-16 code unit corresponding to this Char.\n *\n * @sample
samples.text.Chars.code\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\n@Su
ppress("DEPRECATION")\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline val Char.code: Int get() =
this.toInt()\n", "*/\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SequencesKt")\n\npackage
kotlin.sequences\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns
`true` if [element] is found in the sequence.\n *\n * The operation is _terminal_.\n *\npublic operator fun
<@kotlin.internal.OnlyInputTypes T> Sequence<T>.contains(element: T): Boolean {\n return indexOf(element)
>= 0\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the
[index] is out of bounds of this sequence.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.elementAt\n\npublic fun <T> Sequence<T>.elementAt(index: Int): T
{\n return elementAtOrElse(index) { throw IndexOutOfBoundsException("Sequence
doesn't contain element at index $index.") }\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this sequence.\n *\n * The operation is
terminal.\n *\n * @sample samples.collections.Collections.Elements.elementAtOrElse\n\npublic fun <T>
Sequence<T>.elementAtOrElse(index: Int, defaultValue: (Int) -> T): T {\n if (index < 0)\n return
defaultValue(index)\n val iterator = iterator()\n var count = 0\n while (iterator.hasNext()) {\n val element
= iterator.next()\n if (index == count++)\n return element\n }\n return
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of bounds of
this sequence.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n\npublic fun <T>
Sequence<T>.elementAtOrNull(index: Int): T? {\n if (index
< 0)\n return null\n val iterator = iterator()\n var count = 0\n while (iterator.hasNext()) {\n val
element = iterator.next()\n if (index == count++)\n return element\n }\n return null\n}\n\n/**\n *

```

Returns the first element matching the given [predicate], or `null` if no such element was found.

```

 * The operation is _terminal_.
 * @sample samples.collections.Collections.Elements.find
 * \n @kotlin.internal.InlineOnly\n public inline fun <T> Sequence<T>.find(predicate: (T) -> Boolean): T? {
 \n return firstOrNull(predicate)\n }
 * Returns the last element matching the given [predicate], or `null` if no such element was found.
 * The operation is _terminal_.
 * @sample samples.collections.Collections.Elements.find
 * \n @kotlin.internal.InlineOnly\n public inline fun <T> Sequence<T>.findLast(predicate: (T) -> Boolean): T? {
 \n return lastOrNull(predicate)\n }
 * Returns the first element.
 * The operation is _terminal_.
 * @throws NoSuchElementException if the sequence is empty.
 * \n public fun <T> Sequence<T>.first(): T {
 \n val iterator = iterator()\n if (!iterator.hasNext())\n throw NoSuchElementException("Sequence is empty.")\n return iterator.next()\n }
 * Returns the first element matching the given [predicate].
 * @throws [NoSuchElementException] if no such element is found.
 * The operation is _terminal_.
 * \n public inline fun <T> Sequence<T>.first(predicate: (T) -> Boolean): T {
 \n for (element in this) if (predicate(element)) return element\n throw NoSuchElementException("Sequence contains no element matching the predicate.")\n }
 * Returns the first non-null value produced by [transform] function being applied to elements of this sequence in iteration order,
 * or throws [NoSuchElementException] if no non-null value was produced.
 * The operation is _terminal_.
 * @sample samples.collections.Collections.Transformations.firstNotNullOf
 * \n @SinceKotlin("1.5")\n @kotlin.internal.InlineOnly\n public inline fun <T, R : Any> Sequence<T>.firstNotNullOf(transform: (T) -> R?): R {
 \n return firstNotNullOfOrNull(transform) ?: throw NoSuchElementException("No element of the sequence was transformed to a non-null value.")\n }
 * Returns the first non-null value produced by [transform] function being applied to elements of this sequence in iteration order,
 * or `null` if no non-null value was produced.
 * The operation is _terminal_.
 * @sample samples.collections.Collections.Transformations.firstNotNullOf
 * \n @SinceKotlin("1.5")\n @kotlin.internal.InlineOnly\n public inline fun <T, R : Any> Sequence<T>.firstNotNullOfOrNull(transform: (T) -> R?): R? {
 \n for (element in this) {\n val result = transform(element)\n if (result != null) {\n return result\n }\n }\n return null\n }
 * Returns the first element, or `null` if the sequence is empty.
 * The operation is _terminal_.
 * \n public fun <T> Sequence<T>.firstOrNull(): T? {
 \n val iterator = iterator()\n if (!iterator.hasNext())\n return null\n return iterator.next()\n }
 * Returns the first element matching the given [predicate], or `null` if element was not found.
 * The operation is _terminal_.
 * \n public inline fun <T> Sequence<T>.firstOrNull(predicate: (T) -> Boolean): T? {
 \n for (element in this) if (predicate(element)) return element\n return null\n }
 * Returns first index of [element], or -1 if the sequence does not contain element.
 * The operation is _terminal_.
 * \n public fun <@kotlin.internal.OnlyInputTypes T> Sequence<T>.indexOf(element: T): Int {
 \n var index = 0\n for (item in this) {\n checkIndexOverflow(index)\n if (element == item)\n return index\n index++\n }\n return -1\n }
 * Returns index of the first element matching the given [predicate], or -1 if the sequence does not contain such element.
 * The operation is _terminal_.
 * \n public inline fun <T> Sequence<T>.indexOfFirst(predicate: (T) -> Boolean): Int {
 \n var index = 0\n for (item in this) {\n checkIndexOverflow(index)\n if (predicate(item))\n return index\n index++\n }\n return -1\n }
 * Returns index of the last element matching the given [predicate], or -1 if the sequence does not contain such element.
 * The operation is _terminal_.
 * \n public inline fun <T> Sequence<T>.indexOfLast(predicate: (T) -> Boolean): Int {
 \n var lastIndex = -1\n var index = 0\n for (item in this) {\n checkIndexOverflow(index)\n if (predicate(item))\n lastIndex = index\n index++\n }\n return lastIndex\n }
 * Returns the last element.
 * The operation is _terminal_.
 * @throws NoSuchElementException if the sequence is empty.
 * @sample samples.collections.Collections.Elements.last

```

```

*^public fun <T> Sequence<T>.last(): T {
 val iterator = iterator()
 if (!iterator.hasNext()) throw
NoSuchElementException("Sequence is empty.")
 var last = iterator.next()
 while (iterator.hasNext())
last = iterator.next()
 return last
}

* Returns the last element matching the given [predicate].
* The operation is _terminal_.
* @throws NoSuchElementException if no such element is found.
* @sample samples.collections.Collections.Elements.last

*^public inline fun <T> Sequence<T>.last(predicate: (T)
-> Boolean): T {
 var last: T? = null
 var found = false
 for (element in this) {
 if (predicate(element))
 last = element
 found = true
 }
 if (!found) throw
NoSuchElementException("Sequence contains no element matching the predicate.")
@Suppress("UNCHECKED_CAST")
 return last as T
}

* Returns
last index of [element], or -1 if the sequence does not contain element.
* The operation is _terminal_.

*^public fun <@kotlin.internal.OnlyInputTypes T> Sequence<T>.lastIndexOf(element: T): Int {
 var lastIndex = -1
 var index = 0
 for (item in this) {
 checkIndexOverflow(index)
 if (element == item)
lastIndex = index
 index++
 }
 return lastIndex
}

* Returns the last element, or `null` if the
sequence is empty.
* The operation is _terminal_.
* @sample
samples.collections.Collections.Elements.last

*^public fun <T> Sequence<T>.lastOrNull(): T? {
 val iterator
= iterator()
 if (!iterator.hasNext())
 return null
 var last = iterator.next()
 while (iterator.hasNext())
 last = iterator.next()
 return last
}

* Returns the last element matching the given [predicate], or `null`
if no such element was found.
* The operation is _terminal_.
* @sample
samples.collections.Collections.Elements.last

*^public inline fun <T>
Sequence<T>.lastOrNull(predicate: (T) -> Boolean): T? {
 var last: T? = null
 for (element in this) {
 if
(predicate(element)) {
 last = element
 }
 }
 return last
}

* Returns the single element,
or throws an exception if the sequence is empty or has more than one element.
* The operation is _terminal_.

*^public fun <T> Sequence<T>.single(): T {
 val iterator = iterator()
 if (!iterator.hasNext())
 throw
NoSuchElementException("Sequence is empty.")
 val single = iterator.next()
 if (iterator.hasNext())
 throw IllegalArgumentException("Sequence has more than one element.")
 return single
}

* Returns
the single element matching the given [predicate], or throws exception if there is no or more than one matching
element.
* The operation is _terminal_.

*^public inline fun <T> Sequence<T>.single(predicate:
(T) -> Boolean): T {
 var single: T? = null
 var found = false
 for (element in this) {
 if
(predicate(element)) {
 if (found) throw IllegalArgumentException("Sequence contains more than one
matching element.")
 single = element
 found = true
 }
 }
 if (!found) throw
NoSuchElementException("Sequence contains no element matching the predicate.")
@Suppress("UNCHECKED_CAST")
 return single as T
}

* Returns single element, or `null` if the
sequence is empty or has more than one element.
* The operation is _terminal_.

*^public fun <T>
Sequence<T>.singleOrNull(): T? {
 val iterator = iterator()
 if (!iterator.hasNext())
 return null
 val
single = iterator.next()
 if (iterator.hasNext())
 return null
 return single
}

* Returns the single
element matching the given [predicate], or `null` if element was not found or more than
one element was found.
* The operation is _terminal_.

*^public inline fun <T>
Sequence<T>.singleOrNull(predicate: (T) -> Boolean): T? {
 var single: T? = null
 var found = false
 for
(element in this) {
 if (predicate(element)) {
 if (found) return null
 single = element
 found = true
 }
 }
 if (!found) return null
 return single
}

* Returns a sequence containing
all elements except first [n] elements.
* The operation is _intermediate_ and _stateless_.
* @throws
IllegalArgumentException if [n] is negative.
* @sample
samples.collections.Collections.Transformations.drop

*^public fun <T> Sequence<T>.drop(n: Int):
Sequence<T> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 return when {
 n
== 0 -> this
 this is DropTakeSequence -> this.drop(n)
 else -> DropSequence(this, n)
 }
}

* Returns a sequence containing
all elements except first elements that satisfy the given [predicate].
* The operation is _intermediate_ and
stateless.
* @sample
samples.collections.Collections.Transformations.drop

*^public fun <T>

```





```

if [n] is negative.\n * \n * @sample samples.collections.Collections.Transformations.take\n *^\npublic fun <T>
Sequence<T>.take(n: Int): Sequence<T> {\n require(n >= 0) { \"Requested element count $n is less than zero.\"
}\n return when {\n n == 0 -> emptySequence()\n this is DropTakeSequence -> this.take(n)\n else ->
TakeSequence(this, n)\n }\n}\n\n/**\n * Returns a sequence containing first elements satisfying the given
[predicate].\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.take\n *^\npublic fun <T> Sequence<T>.takeWhile(predicate: (T) -
> Boolean): Sequence<T> {\n return TakeWhileSequence(this, predicate)\n}\n\n/**\n * Returns a sequence that
yields elements of this sequence sorted according to their natural sort order.\n * \n * The sort is _stable_. It means
that equal elements preserve their order relative to each other after sorting.\n * \n * The operation is
intermediate and _stateful_.\n *^\npublic fun <T : Comparable<T>> Sequence<T>.sorted(): Sequence<T> {\n
return object : Sequence<T> {\n override fun iterator(): Iterator<T> {\n val sortedList =
this@sorted.toMutableList()\n sortedList.sort()\n return sortedList.iterator()\n }\n}\n}\n\n/**\n * Returns a sequence that yields elements of this sequence sorted according to natural sort order of the value
returned by specified [selector] function.\n * \n * The sort is _stable_. It means that equal elements preserve their
order relative to each other after sorting.\n * \n * The operation is _intermediate_ and _stateful_.\n * \n * @sample
samples.collections.Collections.Sorting.sortedBy\n *^\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.sortedBy(crossinline selector: (T) -> R?): Sequence<T> {\n return
sortedWith(compareBy(selector))\n}\n\n/**\n * Returns a sequence that yields elements of this sequence sorted
descending according
to natural sort order of the value returned by specified [selector] function.\n * \n * The sort is _stable_. It means that
equal elements preserve their order relative to each other after sorting.\n * \n * The operation is _intermediate_ and
stateful.\n *^\npublic inline fun <T, R : Comparable<R>> Sequence<T>.sortedByDescending(crossinline selector:
(T) -> R?): Sequence<T> {\n return sortedWith(compareByDescending(selector))\n}\n\n/**\n * Returns a
sequence that yields elements of this sequence sorted descending according to their natural sort order.\n * \n * The
sort is _stable_. It means that equal elements preserve their order relative to each other after sorting.\n * \n * The
operation is _intermediate_ and _stateful_.\n *^\npublic fun <T : Comparable<T>>
Sequence<T>.sortedDescending(): Sequence<T> {\n return sortedWith(reverseOrder())\n}\n\n/**\n * Returns a
sequence that yields elements of this sequence sorted according to the specified [comparator].\n * \n * The sort is
stable. It means that equal elements preserve their order relative to each other after sorting.\n * \n * The operation
is _intermediate_ and _stateful_.\n *^\npublic fun <T> Sequence<T>.sortedWith(comparator: Comparator<in T>):
Sequence<T> {\n return object : Sequence<T> {\n override fun iterator(): Iterator<T> {\n val
sortedList = this@sortedWith.toMutableList()\n sortedList.sortWith(comparator)\n return
sortedList.iterator()\n }\n }\n}\n\n/**\n * Returns a [Map] containing key-value pairs provided by [transform]
function\n * applied to elements of the given sequence.\n * \n * If any of two pairs would have the same key the last
one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original sequence.\n
*\n * The operation is _terminal_.\n * \n * @sample samples.collections.Collections.Transformations.associate\n
*^\npublic inline fun <T, K, V> Sequence<T>.associate(transform: (T) -> Pair<K,
V>): Map<K, V> {\n return associateTo(LinkedHashMap<K, V>(), transform)\n}\n\n/**\n * Returns a [Map]
containing the elements from the given sequence indexed by the key\n * returned from [keySelector] function
applied to each element.\n * \n * If any two elements would have the same key returned by [keySelector] the last
one gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original sequence.\n
*\n * The operation is _terminal_.\n * \n * @sample samples.collections.Collections.Transformations.associateBy\n
*^\npublic inline fun <T, K> Sequence<T>.associateBy(keySelector: (T) -> K): Map<K, T> {\n return
associateByTo(LinkedHashMap<K, T>(), keySelector)\n}\n\n/**\n * Returns a [Map] containing the values
provided by [valueTransform] and indexed by [keySelector] functions applied to elements of the given sequence.\n
*\n * If any two elements would have the same key returned by [keySelector] the last one gets added to the map.\n
*\n * The

```

returned map preserves the entry iteration order of the original sequence.

`fun <T, K, V> Sequence<T>.associateByWithKeySelector(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, V> {`  
`return associateByTo(LinkedHashMap<K, V>(), keySelector, valueTransform)}`  
 Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function applied to each element of the given sequence and value is the element itself. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The operation is `_terminal_`.

`fun <T, K, M : MutableMap<in K, in T>> Sequence<T>.associateByTo(destination: M, keySelector: (T) -> K): M {`  
`for (element in this) {`  
`destination.put(keySelector(element), element)`  
`}`  
`return destination`  
 Populates and returns the [destination] mutable map with key-value pairs, where key is provided by the [keySelector] function and value is provided by the [valueTransform] function applied to elements of the given sequence. If any two elements would have the same key returned by [keySelector] the last one gets added to the map. The operation is `_terminal_`.

`fun <T, K, V, M : MutableMap<in K, in V>> Sequence<T>.associateByToWithKeySelectorAndValueTransform(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {`  
`for (element in this) {`  
`destination.put(keySelector(element), valueTransform(element))`  
`}`  
`return destination`  
 Populates and returns the [destination] mutable map with key-value pairs provided by [transform] function applied to each element of the given sequence. If any of two pairs would have the same key the last one gets added to the map. The operation is `_terminal_`.

`fun <T, K, V, M : MutableMap<in K, in V>> Sequence<T>.associateTo(destination: M, transform: (T) -> Pair<K, V>): M {`  
`for (element in this) {`  
`destination += transform(element)`  
`}`  
`return destination`  
 Returns a [Map] where keys are elements from the given sequence and values are produced by the [valueSelector] function applied to each element. If any two elements are equal, the last one gets added to the map. The returned map preserves the entry iteration order of the original sequence. The operation is `_terminal_`.

`fun <K, V> Sequence<K>.associateWith(valueSelector: (K) -> V): Map<K, V> {`  
`val result = LinkedHashMap<K, V>()`  
`return associateWithTo(result, valueSelector)`  
 Populates and returns the [destination] mutable map with key-value pairs for each element of the given sequence, where key is the element itself and value is provided by the [valueSelector] function applied to that key. If any two elements are equal, the last one overwrites the former value in the map. The operation is `_terminal_`.

`fun <K, V, M : MutableMap<in K, in V>> Sequence<K>.associateWithTo(destination: M, valueSelector: (K) -> V): M {`  
`for (element in this) {`  
`destination.put(element, valueSelector(element))`  
`}`  
`return destination`  
 Appends all elements to the given [destination] collection. The operation is `_terminal_`.

`fun <T, C : MutableCollection<in T>> Sequence<T>.toCollection(destination: C): C {`  
`for (item in this) {`  
`destination.add(item)`  
`}`  
`return destination`  
 Returns a new [HashSet] of all elements. The operation is `_terminal_`.

`fun <T> Sequence<T>.toHashSet(): HashSet<T> {`  
`return toCollection(HashSet<T>())`  
 Returns a [List] containing all elements. The operation is `_terminal_`.

`fun <T> Sequence<T>.toList(): List<T> {`  
`return this.toMutableList().optimizeReadOnlyList()`  
 Returns a new [MutableList] filled with all elements of this sequence. The operation is `_terminal_`.

`fun <T> Sequence<T>.toMutableList(): MutableList<T> {`  
`return toCollection(ArrayList<T>())`  
 Returns a [Set] of all elements. The returned set preserves the element iteration order of the original sequence. The operation is `_terminal_`.

`fun <T> Sequence<T>.toSet():`

```

Set<T> {\n return toCollection(LinkedHashSet<T>()).optimizeReadOnlySet()\n}\n\n/**\n * Returns a single
sequence of all elements from results of [transform] function being invoked on each element of original sequence.\n
*\n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.flatMap\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIterable")\npublic fun <T, R>
Sequence<T>.flatMap(transform: (T) -> Iterable<R>): Sequence<R> {\n return FlatteningSequence(this,
transform, Iterable<R>::iterator)\n}\n\n/**\n * Returns a single sequence of all elements from results of [transform]
function being invoked on each element of original sequence.\n * \n * The operation is _intermediate_ and
stateless.\n * \n * @sample samples.collections.Collections.Transformations.flatMap\n *\n\npublic fun <T, R>
Sequence<T>.flatMap(transform:
(T) -> Sequence<R>): Sequence<R> {\n return FlatteningSequence(this, transform,
Sequence<R>::iterator)\n}\n\n/**\n * Returns a single sequence of all elements yielded from results of [transform]
function being invoked on each element\n * and its index in the original sequence.\n * \n * The operation is
intermediate and _stateless_.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\npublic fun <T, R>
Sequence<T>.flatMapIndexed(transform: (index: Int, T) -> Iterable<R>): Sequence<R> {\n return
flatMapIndexed(this, transform, Iterable<R>::iterator)\n}\n\n/**\n * Returns a single sequence of all elements
yielded from results of [transform] function being invoked on each element\n * and its index in the original
sequence.\n * \n * The operation is _intermediate_
and _stateless_.\n * \n * @sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequence")\npublic fun <T, R>
Sequence<T>.flatMapIndexed(transform: (index: Int, T) -> Sequence<R>): Sequence<R> {\n return
flatMapIndexed(this, transform, Sequence<R>::iterator)\n}\n\n/**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original sequence, to the given
[destination].\n * \n * The operation is _terminal_.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapIndexedTo(destination: C, transform:
(index:
Int, T) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list =
transform(checkIndexOverflow(index++), element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element\n * and its index in the original sequence, to the given [destination].\n * \n * The operation is _terminal_.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedSequenceTo")\n@kotlin.internal.InlineOnly\npublic
inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapIndexedTo(destination: C, transform:
(index: Int, T) -> Sequence<R>): C {\n var index = 0\n for (element in this) {\n val list =
transform(checkIndexOverflow(index++), element)\n destination.addAll(list)\n }\n return
destination\n}\n\n/**\n * Appends all elements yielded from results of [transform] function being invoked on each
element of original sequence, to the given [destination].\n * \n * The operation is _terminal_.\n
*\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIterableTo")\npublic inline fun <T, R, C :
MutableCollection<in R>> Sequence<T>.flatMapTo(destination: C, transform: (T) -> Iterable<R>): C {\n for

```

```

(element in this) {
 val list = transform(element)
 destination.addAll(list)
}
return destination
}

```

Appends all elements yielded from results of [transform] function being invoked on each element of original sequence, to the given [destination].

The operation is `_terminal_`.

```

public inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.flatMapTo(destination: C, transform: (T) -> Sequence<R>): C {
 for (element in this) {
 val list = transform(element)
 destination.addAll(list)
 }
 return destination
}

```

Groups elements of the original sequence by the key returned by the given [keySelector] function applied to each element and returns a map where each group key is associated with a list of corresponding elements.

The returned map preserves the entry iteration order of the keys produced from the original sequence.

The operation is `_terminal_`.

@sample

```

samples.collections.Collections.Transformations.groupBy

```

```

public inline fun <T, K> Sequence<T>.groupBy(keySelector: (T) -> K): Map<K, List<T>> {
 return groupByTo(LinkedHashMap<K, MutableList<T>>(), keySelector)
}

```

Groups values returned by the [valueTransform] function applied to each element of the original sequence by the key returned by the given [keySelector] function applied to the element and returns a map where each group key is associated with a list of corresponding values.

The returned map preserves the entry iteration order of the keys produced from the original sequence.

The operation is `_terminal_`.

@sample

```

samples.collections.Collections.Transformations.groupByKeysAndValues

```

```

public inline fun <T, K, V> Sequence<T>.groupBy(keySelector: (T) -> K, valueTransform: (T) -> V): Map<K, List<V>> {
 return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector, valueTransform)
}

```

Groups elements of the original sequence by the key returned by the given [keySelector] function applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.

The operation is `_terminal_`.

@return The [destination] map.

The operation is `_terminal_`.

@sample

```

samples.collections.Collections.Transformations.groupBy

```

```

public inline fun <T, K, M : MutableMap<in K, MutableList<T>>> Sequence<T>.groupByTo(destination: M, keySelector: (T) -> K): M {
 for (element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) { ArrayList<T>() }
 list.add(element)
 }
 return destination
}

```

Groups values returned by the [valueTransform] function applied to each element of the original sequence by the key returned by the given [keySelector] function applied to the element and puts to the [destination] map each group key associated with a list of corresponding values.

The operation is `_terminal_`.

@return The [destination] map.

The operation is `_terminal_`.

@sample

```

samples.collections.Collections.Transformations.groupByKeysAndValues

```

```

public inline fun <T, K, V, M : MutableMap<in K, MutableList<V>>> Sequence<T>.groupByTo(destination: M, keySelector: (T) -> K, valueTransform: (T) -> V): M {
 for (element in this) {
 val key = keySelector(element)
 val list = destination.getOrPut(key) { ArrayList<V>() }
 list.add(valueTransform(element))
 }
 return destination
}

```

Creates a [Grouping]

source from a sequence to be used later with one of group-and-fold operations using the specified [keySelector] function to extract a key from each element.

The operation is `_intermediate_` and `_stateless_`.

@sample

```

samples.collections.Grouping.groupingByEachCount

```

```

@SinceKotlin("1.1")
public inline fun <T, K> Sequence<T>.groupingBy(crossinline keySelector: (T) -> K): Grouping<T, K> {
 return object : Grouping<T, K> {
 override fun sourceIterator(): Iterator<T> = this@groupingBy.iterator()
 override fun keyOf(element: T): K = keySelector(element)
 }
}

```

Returns a sequence containing the results of applying the given [transform] function to each element in the original sequence.

The operation is `_intermediate_` and `_stateless_`.

@sample

```

samples.collections.Collections.Transformations.map

```

```

public fun <T, R> Sequence<T>.map(transform: (T) -> R): Sequence<R> {
 return TransformingSequence(this, transform)
}

```

Returns a sequence containing the results of applying the given [transform] function to each element and its index in the original sequence.

@param [transform] function that takes the index of an element and the element itself and returns the result of the transform applied to the element.

The operation is `_intermediate_` and `_stateless_`.

```

public fun <T, R> Sequence<T>.mapIndexed(transform: (index:

```

Int, T) -> R): Sequence<R> {\n return TransformingIndexedSequence(this, transform)\n}\n\n/\*\*\n \* Returns a sequence containing only the non-null results of applying the given [transform] function\n \* to each element and its index in the original sequence.\n \* @param [transform] function that takes the index of an element and the element itself\n \* and returns the result of the transform applied to the element.\n \*\n \* The operation is `_intermediate_` and `_stateless_`.\n \*/\npublic fun <T, R : Any> Sequence<T>.mapIndexedNotNull(transform: (index: Int, T) -> R?): Sequence<R> {\n return TransformingIndexedSequence(this, transform).filterNotNull()\n}\n\n/\*\*\n \* Applies the given [transform] function to each element and its index in the original sequence\n \* and appends only the non-null results to the given [destination].\n \* @param [transform] function that takes the index of an element and the element itself\n \* and returns the result of the transform applied to the element.\n \*\n \* The operation is `_terminal_`.\n \*/\npublic inline fun <T, R : Any, C : MutableCollection<in R>> Sequence<T>.mapIndexedNotNullTo(destination: C, transform: (index: Int, T) -> R?): C {\n forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }\n return destination\n}\n\n/\*\*\n \* Applies the given [transform] function to each element and its index in the original sequence\n \* and appends the results to the given [destination].\n \* @param [transform] function that takes the index of an element and the element itself\n \* and returns the result of the transform applied to the element.\n \*\n \* The operation is `_terminal_`.\n \*/\npublic inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.mapIndexedTo(destination: C, transform: (index: Int, T) -> R): C {\n var index = 0\n for (item in this)\n destination.add(transform(checkIndexOverflow(index++), item))\n return destination\n}\n\n/\*\*\n \* Returns a sequence containing only the non-null results of applying the given [transform] function\n \* to each element in the original sequence.\n \*\n \* The operation is `_intermediate_` and `_stateless_`.\n \*\n \* @sample samples.collections.Collections.Transformations.mapNotNull\n \*/\npublic fun <T, R : Any> Sequence<T>.mapNotNull(transform: (T) -> R?): Sequence<R> {\n return TransformingSequence(this, transform).filterNotNull()\n}\n\n/\*\*\n \* Applies the given [transform] function to each element in the original sequence\n \* and appends only the non-null results to the given [destination].\n \*\n \* The operation is `_terminal_`.\n \*/\npublic inline fun <T, R : Any, C : MutableCollection<in R>> Sequence<T>.mapNotNullTo(destination: C, transform: (T) -> R?): C {\n forEach { element -> transform(element)?.let { destination.add(it) } }\n return destination\n}\n\n/\*\*\n \* Applies the given [transform] function to each element of the original sequence\n \* and appends the results to the given [destination].\n \*\n \* The operation is `_terminal_`.\n \*/\npublic inline fun <T, R, C : MutableCollection<in R>> Sequence<T>.mapTo(destination: C, transform: (T) -> R): C {\n for (item in this)\n destination.add(transform(item))\n return destination\n}\n\n/\*\*\n \* Returns a sequence that wraps each element of the original sequence\n \* into an [IndexedValue] containing the index of that element and the element itself.\n \*\n \* The operation is `_intermediate_` and `_stateless_`.\n \*/\npublic fun <T> Sequence<T>.withIndex(): Sequence<IndexedValue<T>> {\n return IndexingSequence(this)\n}\n\n/\*\*\n \* Returns a sequence containing only distinct elements from the given sequence.\n \*\n \* Among equal elements of the given sequence, only the first one will be present in the resulting sequence.\n \*\n \* The elements in the resulting sequence are in the same order as they were in the source sequence.\n \*\n \* The operation is `_intermediate_` and `_stateful_`.\n \*\n \* @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n \*/\npublic fun <T> Sequence<T>.distinct(): Sequence<T> {\n return this.distinctBy { it }\n}\n\n/\*\*\n \* Returns a sequence containing only elements from the given sequence\n \* having distinct keys returned by the given [selector] function.\n \*\n \* Among elements of the given sequence with equal keys, only the first one will be present in the resulting sequence.\n \*\n \* The elements in the resulting sequence are in the same order as they were in the source sequence.\n \*\n \* The operation is `_intermediate_` and `_stateful_`.\n \*\n \* @sample samples.collections.Collections.Transformations.distinctAndDistinctBy\n \*/\npublic fun <T, K> Sequence<T>.distinctBy(selector: (T) -> K): Sequence<T> {\n return DistinctSequence(this, selector)\n}\n\n/\*\*\n \* Returns a new [MutableSet] containing all distinct elements from the given sequence.\n \*\n \* The returned set preserves the element iteration order of the original sequence.\n \*\n \* The operation is `_terminal_`.\n \*/\npublic fun







```

produced by [selector] function is `NaN`, the returned result is `NaN`.
 * The operation is _terminal_.
 * Since Kotlin("1.4")
 * OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * OverloadResolution
 * ByLambdaReturnType
 * kotlin.internal.InlineOnly
 * public inline fun <T> Sequence<T>.maxOrNull(selector:
(T) -> Double): Double? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var max = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 max = maxOf(max, v)
 }
 return max
}
 * Returns the largest value among all
values produced by [selector] function
 * applied to each element in the sequence or `null` if there are no
elements.
 * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.
 * The operation is _terminal_.
 * Since Kotlin("1.4")
 * OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * OverloadResolution
 * ByLambdaReturnType
 * kotlin.internal.InlineOnly
 * public inline fun <T> Sequence<T>.maxOrNull(selector:
(T) -> Float): Float? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var max = selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 max = maxOf(max, v)
 }
 return max
}
 * Returns the largest value among all values produced
by [selector] function
 * applied to each
element in the sequence or `null` if there are no elements.
 * The operation is _terminal_.
 * Since Kotlin("1.4")
 * OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * OverloadResolution
 * ByLambdaReturnType
 * kotlin.internal.InlineOnly
 * public inline fun <T, R : Comparable<R>>
Sequence<T>.maxOrNull(selector: (T) -> R): R? {
 val iterator = iterator()
 if (!iterator.hasNext()) return
null
 var max = selector(iterator.next())
 while (iterator.hasNext()) {
 val v =
selector(iterator.next())
 if (max < v) {
 max = v
 }
 }
 return
max
}
 * Returns the largest value according to the provided [comparator]
 * among all values
produced by [selector] function applied to each element in the sequence.
 * @throws
NoSuchElementException if the sequence is empty.
 * The operation is _terminal_.
 * Since Kotlin("1.4")
 * OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * OverloadResolution
 * ByLambdaReturnType
 * kotlin.internal.InlineOnly
 * public
inline fun <T, R> Sequence<T>.maxWith(comparator: Comparator<in R>, selector: (T) -> R): R {
 val
iterator = iterator()
 if (!iterator.hasNext()) throw NoSuchElementException()
 var max =
selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 if
(comparator.compare(max, v) < 0) {
 max = v
 }
 }
 return max
}
 * Returns the largest value according to the provided [comparator]
 * among all values produced by [selector]
function applied to each element in the sequence or `null` if there are no elements.
 * The operation is
terminal.
 * Since Kotlin("1.4")
 * OptIn(kotlin.experimental.ExperimentalTypeInference::class)
 * OverloadResolution
 * ByLambdaReturnType
 * kotlin.internal.InlineOnly
 * public inline fun <T, R>
Sequence<T>.maxOrNull(comparator: Comparator<in R>, selector:
(T) -> R): R? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var max =
selector(iterator.next())
 while (iterator.hasNext()) {
 val v = selector(iterator.next())
 if
(comparator.compare(max, v) < 0) {
 max = v
 }
 }
 return max
}
 * Returns the largest element or `null` if there are no elements.
 * If any of elements is `NaN` returns `NaN`.
 * The operation is _terminal_.
 * Since Kotlin("1.4")
 * public fun Sequence<Double>.maxOrNull():
Double? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var max = iterator.next()
 while
(iterator.hasNext()) {
 val e = iterator.next()
 max = maxOf(max, e)
 }
 return max
}
 * Returns the largest element or `null` if there are no elements.
 * If any of elements is `NaN` returns `NaN`.
 * The operation is _terminal_.
 * Since Kotlin("1.4")
 * public
fun Sequence<Float>.maxOrNull(): Float? {
 val iterator = iterator()
 if (!iterator.hasNext()) return null
 var max = iterator.next()
 while (iterator.hasNext()) {
 val e = iterator.next()
 max = maxOf(max, e)
 }
 return max
}
 * Returns the largest element or `null` if there are no elements.
 * The operation

```

```

is _terminal_.\n *\n@SinceKotlin("1.4")\npublic fun <T : Comparable<T>> Sequence<T>.maxOrNull(): T? {\n
val iterator = iterator()\n if (!iterator.hasNext()) return null\n var max = iterator.next()\n while
(iterator.hasNext()) {\n val e = iterator.next()\n if (max < e) max = e\n }\n return max\n}\n\n/**\n *
Returns the first element having the largest value according to the provided [comparator].\n *\n * The operation is
terminal.\n *\n * @throws NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow")\n@Suppress("CONFLICTING_OVER
LOADS")\npublic
fun <T> Sequence<T>.maxWith(comparator: Comparator<in T>): T {\n val iterator = iterator()\n if
(!iterator.hasNext()) throw NoSuchElementException()\n var max = iterator.next()\n while (iterator.hasNext())
{\n val e = iterator.next()\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n *
Returns the first element having the largest value according to the provided [comparator] or `null` if there are no
elements.\n *\n * The operation is _terminal_.\n *\n@SinceKotlin("1.4")\npublic fun <T>
Sequence<T>.maxWithOrNull(comparator: Comparator<in T>): T? {\n val iterator = iterator()\n if
(!iterator.hasNext()) return null\n var max = iterator.next()\n while (iterator.hasNext()) {\n val e =
iterator.next()\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
smallest element.\n *\n * If any of elements is `NaN` returns `NaN`.\n *\n * The operation
is _terminal_.\n *\n * @throws NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Sequence<Double>.min(): Double {\n val iterator = iterator()\n if (!iterator.hasNext()) throw
NoSuchElementException()\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e =
iterator.next()\n min = minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n *\n * If
any of elements is `NaN` returns `NaN`.\n *\n * The operation is _terminal_.\n *\n * @throws
NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun Sequence<Float>.min(): Float {\n val iterator = iterator()\n if (!iterator.hasNext()) throw
NoSuchElementException()\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e =
iterator.next()\n
min = minOf(min, e)\n }\n return min\n}\n\n/**\n * Returns the smallest element.\n *\n * The operation is
terminal.\n *\n * @throws NoSuchElementException if the sequence is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow")\n@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun <T : Comparable<T>> Sequence<T>.min(): T {\n val iterator = iterator()\n if
(!iterator.hasNext()) throw NoSuchElementException()\n var min = iterator.next()\n while (iterator.hasNext())
{\n val e = iterator.next()\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the first element
yielding the smallest value of the given function.\n *\n * The operation is _terminal_.\n *\n * @throws
NoSuchElementException if the sequence is empty.\n *\n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow")\n@Suppress("CONFLICTING_OVERLO
ADS")\npublic inline fun <T, R :
Comparable<R>> Sequence<T>.minBy(selector: (T) -> R): T {\n val iterator = iterator()\n if
(!iterator.hasNext()) throw NoSuchElementException()\n var minElem = iterator.next()\n if (!iterator.hasNext())
return minElem\n var minValue = selector(minElem)\n do {\n val e = iterator.next()\n val v =
selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n } while
(iterator.hasNext())\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the
given function or `null` if there are no elements.\n *\n * The operation is _terminal_.\n *\n * @sample
samples.collections.Collections.Aggregates.minByOrNull\n
*\n@SinceKotlin("1.4")\npublic inline fun <T, R :
Comparable<R>> Sequence<T>.minByOrNull(selector: (T) -> R): T? {\n val iterator = iterator()\n if
(!iterator.hasNext()) return null\n var minElem = iterator.next()\n if (!iterator.hasNext()) return minElem\n var

```

```

minValue = selector(minElem)\n do {\n val e = iterator.next()\n val v = selector(e)\n if (minValue >
v) {\n minElem = e\n minValue = v\n }\n } while (iterator.hasNext())\n return
minElem\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the sequence.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result
is `NaN`.\n * \n * The operation is _terminal_.\n * \n * @throws NoSuchElementException if the sequence is
empty.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOf(selector: (T) ->
Double): Double {\n val iterator = iterator()\n if (!iterator.hasNext()) throw NoSuchElementException()\n var
minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n val
v = selector(iterator.next())\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns
the smallest value among all values produced by [selector] function\n * applied to each element in the sequence.\n *
\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The operation is
terminal.\n * \n * @throws NoSuchElementException if the sequence is empty.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOf(selector: (T) ->
Float): Float {\n val iterator = iterator()\n if (!iterator.hasNext()) throw NoSuchElementException()\n var
minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n
minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each element in the sequence.\n * \n * The operation is
terminal.\n * \n * @throws NoSuchElementException if the sequence is empty.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.minOf(selector: (T) -> R): R {\n val iterator = iterator()\n if (!iterator.hasNext()) throw
NoSuchElementException()\n var minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n val v
= selector(iterator.next())\n if (minValue > v) {\n minValue = v\n }\n }\n return
minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
each element in the sequence or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is
`NaN`.\n * \n * The operation is _terminal_.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.minOrNull(selector:
(T) -> Double): Double? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var minValue =
selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
by [selector] function\n * applied to each element in the sequence or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * The operation is _terminal_.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.minOrNull(selector: (T) -> Float): Float? {\n val iterator = iterator()\n if
(!iterator.hasNext()) return null\n var minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n
val v = selector(iterator.next())\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n *
Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
sequence or `null` if there are no elements.\n * \n * The operation is _terminal_.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <T, R : Comparable<R>>
Sequence<T>.minOrNull(selector: (T) -> R): R? {\n val iterator = iterator()\n if (!iterator.hasNext()) return
null\n var minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n val v =

```

```

selector(iterator.next())\n
 if (minValue > v) {\n minValue = v\n }\n return minValue\n}\n\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the sequence.\n * @throws NoSuchElementException if the sequence is empty.\n * The operation is _terminal_.\n\n * \n\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolutionByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T, R>\n Sequence<T>.minOfWith(comparator: Comparator<in R>, selector: (T) -> R): R {\n val iterator = iterator()\n if (!iterator.hasNext()) throw NoSuchElementException()\n var minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each element in the sequence or `null` if there are no elements.\n * The operation is _terminal_.\n\n * \n\n @SinceKotlin("1.4")\n @OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n @OverloadResolutionByLambdaReturnType\n @kotlin.internal.InlineOnly\n public inline fun <T, R>\n Sequence<T>.minOfWithOrNull(comparator: Comparator<in R>, selector: (T) -> R): R? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var minValue = selector(iterator.next())\n while (iterator.hasNext()) {\n val v = selector(iterator.next())\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n * Returns the smallest element or `null` if there are no elements.\n * If any of elements is `NaN` returns `NaN`.\n * The operation is _terminal_.\n\n * \n\n @SinceKotlin("1.4")\n public\n fun Sequence<Double>.minOrNull(): Double? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n min = minOf(min, e)\n }\n return min\n}\n\n * Returns the smallest element or `null` if there are no elements.\n * If any of elements is `NaN` returns `NaN`.\n * The operation is _terminal_.\n\n * \n\n @SinceKotlin("1.4")\n public fun\n Sequence<Float>.minOrNull(): Float? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n min = minOf(min, e)\n }\n return min\n}\n\n * Returns the smallest element or `null` if there are no elements.\n * The operation is _terminal_.\n\n * \n\n @SinceKotlin("1.4")\n public fun <T : Comparable<T>> Sequence<T>.minOrNull(): T? {\n val iterator = iterator()\n if (!iterator.hasNext())\n return null\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n if (min > e) min = e\n }\n return min\n}\n\n * Returns the first element having the smallest value according to the provided [comparator].\n * The operation is _terminal_.\n * @throws NoSuchElementException if the sequence is empty.\n\n * \n\n @SinceKotlin("1.7")\n @kotlin.jvm.JvmName("minWithOrThrow")\n @Suppress("CONFLICTING_OVERLOADS")\n public fun <T> Sequence<T>.minWith(comparator: Comparator<in T>): T {\n val iterator = iterator()\n if (!iterator.hasNext()) throw NoSuchElementException()\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n * The operation is _terminal_.\n\n * \n\n @SinceKotlin("1.4")\n public fun <T> Sequence<T>.minWithOrNull(comparator: Comparator<in T>): T? {\n val iterator = iterator()\n if (!iterator.hasNext()) return null\n var min = iterator.next()\n while (iterator.hasNext()) {\n val e = iterator.next()\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n * Returns `true` if the sequence has no elements.\n * The operation is _terminal_.\n\n * \n\n @sample samples.collections.Collections.Aggregates.none\n * \n\n public fun <T> Sequence<T>.none(): Boolean {\n return !iterator().hasNext()\n}\n\n * Returns `true` if no elements match the given [predicate].\n * The operation is _terminal_.\n\n * \n\n @sample samples.collections.Collections.Aggregates.noneWithPredicate\n * \n\n public inline fun <T> Sequence<T>.none(predicate: (T) -> Boolean): Boolean {\n for (element in this) if

```

(predicate(element)) return false\n return true\n}\n\n\*\*\n \* Returns a sequence which performs the given [action] on each element of the original sequence as they pass through it.\n \*\n \* The operation is \_intermediate\_ and \_stateless\_.\n \*\n@SinceKotlin("1.1")\npublic fun <T> Sequence<T>.onEach(action: (T) -> Unit): Sequence<T> {\n return map {\n action(it)\n it\n }\n}\n\n\*\*\n \* Returns a sequence which performs the given [action] on each element of the original sequence as they pass through it.\n \* @param [action] function that takes the index of an element and the element itself\n \* and performs the action on the element.\n \*\n \* The operation is \_intermediate\_ and \_stateless\_.\n \*\n@SinceKotlin("1.4")\npublic fun <T> Sequence<T>.onEachIndexed(action: (index: Int, T) -> Unit): Sequence<T> {\n return mapIndexed { index, element ->\n action(index, element)\n element\n }\n}\n\n\*\*\n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element.\n \*\n \* \n \* Throws an exception if this sequence is empty. If the sequence can be empty in an expected way,\n \* please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n \*\n \* @param [operation] function that takes current accumulator value and an element,\n \* and calculates the next accumulator value.\n \*\n \* The operation is \_terminal\_.\n \*\n \* @sample samples.collections.Collections.Aggregates.reduce\n \*\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Sequence<T>.reduce(operation: (acc: S, T) -> S): S {\n val iterator = this.iterator()\n if (!iterator.hasNext()) throw UnsupportedOperationException("Empty sequence can't be reduced.")\n var accumulator: S = iterator.next()\n while (iterator.hasNext()) {\n accumulator = operation(accumulator, iterator.next())\n }\n return accumulator\n}\n\n\*\*\n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original sequence.\n \*\n \* Throws an exception if this sequence is empty. If the sequence can be empty in an expected way,\n \* please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n \*\n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \*\n \* The operation is \_terminal\_.\n \*\n \* @sample samples.collections.Collections.Aggregates.reduce\n \*\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Sequence<T>.reduceIndexed(operation: (index: Int, acc: S, T) -> S): S {\n val iterator = this.iterator()\n if (!iterator.hasNext()) throw UnsupportedOperationException("Empty sequence can't be reduced.")\n var index = 1\n var accumulator: S = iterator.next()\n while (iterator.hasNext()) {\n accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())\n }\n return accumulator\n}\n\n\*\*\n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original sequence.\n \*\n \* Returns `null` if the sequence is empty.\n \*\n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \*\n \* The operation is \_terminal\_.\n \*\n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n \*\n@SinceKotlin("1.4")\npublic inline fun <S, T : S> Sequence<T>.reduceIndexedOrNull(operation: (index: Int, acc: S, T) -> S): S? {\n val iterator = this.iterator()\n if (!iterator.hasNext()) return null\n var index = 1\n var accumulator: S = iterator.next()\n while (iterator.hasNext()) {\n accumulator = operation(checkIndexOverflow(index++), accumulator, iterator.next())\n }\n return accumulator\n}\n\n\*\*\n \* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element.\n \*\n \* Returns `null` if the sequence is empty.\n \*\n \* @param [operation] function that takes current accumulator value and an element,\n \* and calculates the next accumulator value.\n \*\n \* The operation is \_terminal\_.\n \*\n \* @sample samples.collections.Collections.Aggregates.reduceOrNull\n \*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <S, T : S> Sequence<T>.reduceOrNull(operation: (acc: S, T) -> S): S? {\n val iterator = this.iterator()\n if (!iterator.hasNext()) return null\n var accumulator: S = iterator.next()\n while (iterator.hasNext()) {\n accumulator = operation(accumulator, iterator.next())\n }\n return accumulator\n}\n\n\*\*\n \* Returns a sequence containing successive accumulation values generated by applying [operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n\n

\* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting sequence.\n \* The [initial] value should also be immutable (or should not be mutated)\n \* as it may be passed to [operation] function later because of sequence's lazy nature.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* The operation is `_intermediate_ and _stateless_`.\n \* \n \* @sample

```

samples.collections.Collections.Aggregates.runningFold\n *^\n@SinceKotlin("1.4")\npublic fun <T, R>
Sequence<T>.runningFold(initial: R, operation: (acc: R, T) -> R): Sequence<R> {\n return sequence {\n
yield(initial)\n var accumulator = initial\n for (element in this@runningFold) {\n accumulator =
operation(accumulator, element)\n yield(accumulator)\n }\n }\n}\n\n/**\n * Returns a sequence
containing successive
accumulation values generated by applying [operation] from left to right\n * to each element, its index in the
original sequence and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed
to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting
sequence.\n * The [initial] value should also be immutable (or should not be mutated)\n * as it may be passed to
[operation] function later because of sequence's lazy nature.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n *^\n@SinceKotlin("1.4")\npublic fun <T, R>
Sequence<T>.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {\n return
sequence {\n
yield(initial)\n var index = 0\n var accumulator = initial\n for (element in this@runningFoldIndexed)
{\n accumulator = operation(checkIndexOverflow(index++), accumulator, element)\n
yield(accumulator)\n }\n }\n}\n\n/**\n * Returns a sequence containing successive accumulation values
generated by applying [operation] from left to right\n * to each element and current accumulator value that starts
with the first element of this sequence.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n * otherwise it would affect the previous value in resulting sequence.\n * \n * @param [operation]
function that takes current accumulator value and the element, and calculates the next accumulator value.\n * \n *
The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*^\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic
fun <S, T : S> Sequence<T>.runningReduce(operation: (acc: S, T) -> S): Sequence<S> {\n return sequence {\n
val iterator = iterator()\n if (iterator.hasNext()) {\n var accumulator: S = iterator.next()\n
yield(accumulator)\n while (iterator.hasNext()) {\n accumulator = operation(accumulator,
iterator.next())\n yield(accumulator)\n }\n }\n }\n}\n\n/**\n * Returns a sequence containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original sequence and current accumulator value that starts with the first element of this sequence.\n * \n * Note
that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous
value in resulting sequence.\n * \n * @param [operation] function that takes the index of an element, current
accumulator value\n * and the element itself, and calculates
the next accumulator value.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n *^\n@SinceKotlin("1.4")\npublic fun <S, T : S>
Sequence<T>.runningReduceIndexed(operation: (index: Int, acc: S, T) -> S): Sequence<S> {\n return sequence
{\n val iterator = iterator()\n if (iterator.hasNext()) {\n var accumulator: S = iterator.next()\n
yield(accumulator)\n var index = 1\n while (iterator.hasNext()) {\n accumulator =
operation(checkIndexOverflow(index++), accumulator, iterator.next())\n yield(accumulator)\n }\n
}\n }\n}\n\n/**\n * Returns a sequence containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n *
\n * Note that `acc` value passed to [operation] function should

```

not be mutated;\n \* otherwise it would affect the previous value in resulting sequence.\n \* The [initial] value should also be immutable (or should not be mutated)\n \* as it may be passed to [operation] function later because of sequence's lazy nature.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* The operation is \_intermediate\_ and \_stateless\_.\n \* \n \* @sample samples.collections.Collections.Aggregates.scan\n

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T, R>
Sequence<T>.scan(initial: R, operation: (acc: R, T) -> R): Sequence<R> {\n return runningFold(initial,
operation)\n}\n\n/**\n * Returns a sequence containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original sequence and current accumulator value
that starts with [initial] value.\n * \n * Note that `acc` value
passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting
sequence.\n * The [initial] value should also be immutable (or should not be mutated)\n * as it may be passed to
[operation] function later because of sequence's lazy nature.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * The operation is _intermediate_ and _stateless_.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
```

```
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun <T, R>
Sequence<T>.scanIndexed(initial: R, operation: (index: Int, acc: R, T) -> R): Sequence<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the sequence.\n * \n * The operation is _terminal_.\n *\n@Deprecated("Use sumOf
instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic
inline fun <T> Sequence<T>.sumBy(selector: (T) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n
sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the sequence.\n * \n * The operation is _terminal_.\n *\n@Deprecated("Use
sumOf instead.", ReplaceWith("this.sumOf(selector)"))\n@DeprecatedSinceKotlin(warningSince =
"1.5")\npublic inline fun <T> Sequence<T>.sumByDouble(selector: (T) -> Double): Double {\n var sum: Double
= 0.0\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum
of all values produced by [selector] function applied to each element in the sequence.\n * \n * The operation is
terminal.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.sumOf(selector: (T) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the sequence.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun <T>
Sequence<T>.sumOf(selector: (T) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this) {\n
sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the sequence.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> Sequence<T>.sumOf(selector: (T) -> Long): Long {\n var sum: Long = 0.toLong()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the sequence.\n * \n * The operation is _terminal_.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.sumOf(selector: (T) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return
```

```

sum\n}\n\n/**\n * Returns the sum of
all values produced by [selector] function applied to each element in the sequence.\n *\n * The operation is
terminal.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic inline fun <T> Sequence<T>.sumOf(selector: (T) -> ULong):
ULong {\n var sum: ULong = 0.toULong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns an original collection containing all the non-`null` elements, throwing an
[IllegalArgumentException] if there are any `null` elements.\n *\n * The operation is _intermediate_ and
stateless.\n *\npublic fun <T : Any> Sequence<T?>.requireNonNulls(): Sequence<T> {\n return map { it ? :
throw IllegalArgumentException("null element found in $this.") }\n}\n\n/**\n * Splits this sequence into a
sequence of lists
each not exceeding the given [size].\n *\n * The last list in the resulting sequence may have fewer elements than
the given [size].\n *\n * @param size the number of elements to take in each list, must be positive and can be
greater than the number of elements in this sequence.\n *\n * The operation is _intermediate_ and _stateful_.\n *\n *\n * @sample samples.collections.Collections.Transformations.chunked\n *\n@SinceKotlin("1.2")\npublic fun <T>
Sequence<T>.chunked(size: Int): Sequence<List<T>> {\n return windowed(size, size, partialWindows =
true)\n}\n\n/**\n * Splits this sequence into several lists each not exceeding the given [size]\n * and applies the
given [transform] function to an each.\n *\n * @return sequence of results of the [transform] applied to an each
list.\n *\n * Note that the list passed to the [transform] function is ephemeral and is valid only inside that function.\n
*\n * You should not store it or allow it to escape in some way, unless you made a snapshot
of it.\n *\n * The last list may have fewer elements than the given [size].\n *\n * @param size the number of elements
to take in each list, must be positive and can be greater than the number of elements in this sequence.\n *\n * The
operation is _intermediate_ and _stateful_.\n *\n * @sample samples.text.Strings.chunkedTransform\n
*\n@SinceKotlin("1.2")\npublic fun <T, R> Sequence<T>.chunked(size: Int, transform: (List<T>) -> R):
Sequence<R> {\n return windowed(size, size, partialWindows = true, transform = transform)\n}\n\n/**\n * Returns a sequence containing all elements of the original sequence without the first occurrence of the given
[element].\n *\n * The operation is _intermediate_ and _stateless_.\n *\npublic operator fun <T>
Sequence<T>.minus(element: T): Sequence<T> {\n return object: Sequence<T> {\n override fun iterator():
Iterator<T> {\n var removed = false\n return this@minus.filter { if (!removed && it == element) {\n
removed = true;\n false } else true }.iterator()\n }\n }\n}\n\n/**\n * Returns a sequence containing all elements of original
sequence except the elements contained in the given [elements] array.\n *\n * Note that the source sequence and the
array being subtracted are iterated only when an `iterator` is requested from\n * the resulting sequence. Changing
any of them between successive calls to `iterator` may affect the result.\n *\n * The operation is _intermediate_ and
stateful.\n *\npublic operator fun <T> Sequence<T>.minus(elements: Array<out T>): Sequence<T> {\n if
(elements.isEmpty()) return this\n return object: Sequence<T> {\n override fun iterator(): Iterator<T> {\n
return this@minus.filterNot { it in elements }.iterator()\n }\n }\n}\n\n/**\n * Returns a sequence containing
all elements of original sequence except the elements contained in the given [elements] collection.\n *\n * Note that
the source sequence and the collection being subtracted are
iterated only when an `iterator` is requested from\n * the resulting sequence. Changing any of them between
successive calls to `iterator` may affect the result.\n *\n * The operation is _intermediate_ and _stateful_.\n
*\npublic operator fun <T> Sequence<T>.minus(elements: Iterable<T>): Sequence<T> {\n return object:
Sequence<T> {\n override fun iterator(): Iterator<T> {\n val other =
elements.convertToListIfNotCollection()\n if (other.isEmpty())\n return this@minus.iterator()\n
 else\n return this@minus.filterNot { it in other }.iterator()\n }\n }\n}\n\n/**\n * Returns a sequence
containing all elements of original sequence except the elements contained in the given [elements] sequence.\n *\n
* Note that the source sequence and the sequence being subtracted are iterated only when an `iterator` is requested

```



from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is `_intermediate_` for this sequence and `_terminal_` and `_stateful_` for the [elements] sequence.

```

public operator fun <T> Sequence<T>.minus(elements: Sequence<T>):
Sequence<T> {
 return object: Sequence<T> {
 override fun iterator(): Iterator<T> {
 val other =
 elements.toList()
 if (other.isEmpty())
 return this@minus.iterator()
 else
 return this@minus.filterNot { it in other }.iterator()
 }
 }
}

```

Returns a sequence containing all elements of the original sequence without the first occurrence of the given [element].

The operation is `_intermediate_` and `_stateless_`.

```

@kotlin.internal.InlineOnly
public inline fun <T>
Sequence<T>.minusElement(element: T): Sequence<T> {
 return minus(element)
}

```

Splits the original sequence into pair of lists, where `first` list contains elements for which [predicate] yielded `true`, while `second` list contains elements for which [predicate] yielded `false`.

The operation is `_terminal_`.

```

@sample samples.collections.Sequences.Transformations.partition
public inline fun <T>
Sequence<T>.partition(predicate: (T) -> Boolean): Pair<List<T>, List<T>> {
 val first = ArrayList<T>()
 val second = ArrayList<T>()
 for (element in this) {
 if (predicate(element))
 first.add(element)
 else
 second.add(element)
 }
 return Pair(first, second)
}

```

Returns a sequence containing all elements of the original sequence and then the given [element].

The operation is `_intermediate_` and `_stateless_`.

```

public operator fun <T> Sequence<T>.plus(element: T): Sequence<T> {
 return sequenceOf(this, sequenceOf(element)).flatten()
}

```

Returns a sequence containing all elements of original sequence and then all elements of the given [elements] array.

Note that the source sequence and the array being added are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is `_intermediate_` and `_stateless_`.

```

public operator fun <T> Sequence<T>.plus(elements:
Array<out T>): Sequence<T> {
 return this.plus(elements.asList())
}

```

Returns a sequence containing all elements of original sequence and then all elements of the given [elements] collection.

Note that the source sequence and the collection being added are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is `_intermediate_` and `_stateless_`.

```

public operator fun <T> Sequence<T>.plus(elements:
Iterable<T>): Sequence<T> {
 return sequenceOf(this, elements.asSequence()).flatten()
}

```

Returns a sequence containing all elements of original sequence and then all elements of the given [elements] sequence.

Note that the source sequence and the sequence being added are iterated only when an `iterator` is requested from the resulting sequence. Changing any of them between successive calls to `iterator` may affect the result.

The operation is `_intermediate_` and `_stateless_`.

```

public operator fun <T>
Sequence<T>.plus(elements: Sequence<T>): Sequence<T> {
 return sequenceOf(this,
elements).flatten()
}

```

Returns a sequence containing all elements of the original sequence and then the given [element].

The operation is `_intermediate_` and `_stateless_`.

```

@kotlin.internal.InlineOnly
public inline fun <T> Sequence<T>.plusElement(element: T): Sequence<T> {
 return plus(element)
}

```

Returns a sequence of snapshots of the window of the given [size] sliding along this sequence with the given [step], where each

- snapshot is a list.
- Several last lists may have fewer elements than the given [size].
- Both [size] and [step] must be positive and can be greater than the number of elements in this sequence.

`@param size` the number of elements to take in each window

`@param step` the number of elements to move the window forward by on an each step, by default 1

`@param partialWindows` controls whether or not to keep partial windows in the end if any, by default `false` which means partial windows won't be preserved

`@sample samples.collections.Sequences.Transformations.takeWindows`

```

@SinceKotlin("1.2")
public fun <T>
Sequence<T>.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): Sequence<List<T>> {
 return windowedSequence(size, step, partialWindows, reuseBuffer = false)
}

```

Returns a sequence of results of applying the given [transform] function to an each list representing a view over the window of the given [size]



```

*

public fun <T> Sequence<T>.joinToString(separator: CharSequence = "|", prefix: CharSequence = "\n",

postfix: CharSequence = "\n", limit: Int = -1, truncated: CharSequence = "...", transform: ((T) -> CharSequence)? =

null): String {

 return joinTo(StringBuilder(), separator, prefix, postfix, limit, truncated,

transform).toString()

}

*

Creates an [Iterable] instance that wraps the original sequence returning its

elements when being iterated.

*

public fun <T> Sequence<T>.asIterable(): Iterable<T> {

 return Iterable {

this.iterator() }

}

*

Returns this sequence as a [Sequence].

*

@kotlin.internal.InlineOnly

public inline fun <T> Sequence<T>.asSequence(): Sequence<T> {

 return this

}

*

Returns an average value

of elements in the sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("averageOfByte")

public fun Sequence<Byte>.average(): Double {

 var sum:

Double = 0.0

 var count: Int = 0

 for (element in this) {

sum += element

checkCountOverflow(++count)

 }

return if (count == 0) Double.NaN else sum / count

}

*

Returns an average value of elements in the

sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("averageOfShort")

public fun Sequence<Short>.average(): Double {

 var sum: Double = 0.0

 var count: Int = 0

 for (element in this) {

sum += element

checkCountOverflow(++count)

 }

return if (count == 0) Double.NaN else sum /

count

}

*

Returns an average value of elements in the

sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("averageOfInt")

public fun Sequence<Int>.average(): Double {

 var sum: Double = 0.0

 var count: Int = 0

 for (element in this) {

sum += element

checkCountOverflow(++count)

 }

return if (count == 0) Double.NaN else sum /

count

}

*

Returns

an average value of elements in the sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("averageOfLong")

public fun Sequence<Long>.average(): Double {

 var sum:

Double = 0.0

 var count: Int = 0

 for (element in this) {

sum += element

checkCountOverflow(++count)

 }

return if (count == 0) Double.NaN else sum /

count

}

*

Returns

an average value of elements in the sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("averageOfFloat")

public fun Sequence<Float>.average(): Double {

 var sum:

Double = 0.0

 var count: Int = 0

 for (element in this) {

sum += element

checkCountOverflow(++count)

 }

return if (count == 0) Double.NaN else sum /

count

}

*

Returns

an average value of elements in the sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("averageOfDouble")

public fun Sequence<Double>.average(): Double {

 var sum:

Double = 0.0

 var count: Int = 0

 for (element in this) {

sum += element

checkCountOverflow(++count)

 }

return if (count == 0) Double.NaN else sum /

count

}

*

Returns

the sum of all elements in the sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("sumOfByte")

public fun Sequence<Byte>.sum(): Int {

 var sum: Int = 0

 for (element in this) {

sum += element

 }

return sum

}

*

Returns the sum of all elements in the

sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("sumOfShort")

public fun Sequence<Short>.sum(): Int {

 var sum: Int = 0

 for (element in this) {

sum += element

 }

return sum

}

*

Returns the sum of all elements in the

sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("sumOfInt")

public fun Sequence<Int>.sum(): Int {

 var sum: Int = 0

 for (element in this) {

sum += element

 }

return sum

}

*

Returns the sum of all elements in the

sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("sumOfLong")

public fun Sequence<Long>.sum(): Long {

 var sum:

Long = 0L

 for (element in this) {

sum += element

 }

return sum

}

*

Returns the sum of

all elements in the sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("sumOfFloat")

public fun Sequence<Float>.sum(): Float {

 var sum: Float = 0.0f

 for (element in this) {

sum += element

 }

return sum

}

*

Returns the sum of all elements in

the sequence.

*

The operation is _terminal_.

*

@kotlin.jvm.JvmName("sumOfDouble")

public fun Sequence<Double>.sum(): Double {

 var sum: Double = 0.0

 for (element in this) {

sum += element

 }

return sum

}

```

```

}\n return sum}\n}\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this
source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("SetsKt")\n\npackage
kotlin.collections\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\nimport kotlin.random.*\nimport
kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns a set containing all elements of the original
set except the given [element].\n * \n * The returned set preserves the element iteration order of the original set.\n
*/\n\npublic operator fun <T> Set<T>.minus(element: T): Set<T> {\n val result =
LinkedHashSet<T>(mapCapacity(size))\n var removed = false\n return this.filterTo(result) { if (!removed && it
== element) { removed = true; false } else true }\n}\n\n/**\n * Returns a set containing all elements of the original
set except the elements contained in the given [elements]
array.\n * \n * The returned set preserves the element iteration order of the original set.\n */\n\npublic operator fun
<T> Set<T>.minus(elements: Array<out T>): Set<T> {\n val result = LinkedHashSet<T>(this)\n
result.removeAll(elements)\n return result\n}\n\n/**\n * Returns a set containing all elements of the original set
except the elements contained in the given [elements] collection.\n * \n * The returned set preserves the element
iteration order of the original set.\n */\n\npublic operator fun <T> Set<T>.minus(elements: Iterable<T>): Set<T> {\n
val other = elements.convertToListIfNotCollection()\n if (other.isEmpty())\n return this.toSet()\n if (other
is Set)\n return this.filterNotTo(LinkedHashSet<T>()) { it in other }\n val result = LinkedHashSet<T>(this)\n
result.removeAll(other)\n return result\n}\n\n/**\n * Returns a set containing all elements of the original set
except the elements contained in the given [elements] sequence.\n
* \n * The returned set preserves the element iteration order of the original set.\n */\n\npublic operator fun <T>
Set<T>.minus(elements: Sequence<T>): Set<T> {\n val result = LinkedHashSet<T>(this)\n
result.removeAll(elements)\n return result\n}\n\n/**\n * Returns a set containing all elements of the original set
except the given [element].\n * \n * The returned set preserves the element iteration order of the original set.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Set<T>.minusElement(element: T): Set<T> {\n return
minus(element)\n}\n\n/**\n * Returns a set containing all elements of the original set and then the given [element] if
it isn't already in this set.\n * \n * The returned set preserves the element iteration order of the original set.\n
*/\n\npublic operator fun <T> Set<T>.plus(element: T): Set<T> {\n val result =
LinkedHashSet<T>(mapCapacity(size + 1))\n result.addAll(this)\n result.add(element)\n return
result\n}\n\n/**\n * Returns a set
containing all elements of the original set and the given [elements] array,\n * which aren't already in this set.\n * \n
* The returned set preserves the element iteration order of the original set.\n */\n\npublic operator fun <T>
Set<T>.plus(elements: Array<out T>): Set<T> {\n val result = LinkedHashSet<T>(mapCapacity(this.size +
elements.size))\n result.addAll(this)\n result.addAll(elements)\n return result\n}\n\n/**\n * Returns a set
containing all elements of the original set and the given [elements] collection,\n * which aren't already in this set.\n
* \n * The returned set preserves the element iteration order of the original set.\n */\n\npublic operator fun <T>
Set<T>.plus(elements: Iterable<T>): Set<T> {\n val result =
LinkedHashSet<T>(mapCapacity(elements.collectionSizeOrNull()?.let { this.size + it } ?: this.size * 2))\n
result.addAll(this)\n result.addAll(elements)\n return result\n}\n\n/**\n * Returns a set containing all elements
of the original set and the
given [elements] sequence,\n * which aren't already in this set.\n * \n * The returned set preserves the element
iteration order of the original set.\n */\n\npublic operator fun <T> Set<T>.plus(elements: Sequence<T>): Set<T> {\n
val result = LinkedHashSet<T>(mapCapacity(this.size * 2))\n result.addAll(this)\n result.addAll(elements)\n
return result\n}\n\n/**\n * Returns a set containing all elements of the original set and then the given [element] if
it isn't already in this set.\n * \n * The returned set preserves the element iteration order of the original set.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <T> Set<T>.plusElement(element: T): Set<T> {\n return
plus(element)\n}\n}\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language

```

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```
\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage\nkotlin.text\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:\nhttps://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.\n\n * Returns a character at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this char sequence.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n\n * public expect fun\nCharSequence.elementAt(index: Int): Char\n\n * Returns a character at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this char sequence.\n * \n * @sample\nsamples.collections.Collections.Elements.elementAtOrElse\n\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun\nCharSequence.elementAtOrElse(index: Int, defaultValue: (Int) -> Char): Char {\n return if (index >= 0 && index <= lastIndex) get(index) else defaultValue(index)\n}\n\n * Returns a character at the given [index] or `null` if the [index] is out of bounds of this char sequence.\n * \n * @sample\nsamples.collections.Collections.Elements.elementAtOrNull\n\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun\nCharSequence.elementAtOrNull(index: Int): Char? {\n return this.getOrNull(index)\n}\n\n * Returns the first character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample\nsamples.collections.Collections.Elements.find\n\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun\nCharSequence.find(predicate: (Char) -> Boolean): Char? {\n return firstOrNull(predicate)\n}\n\n * Returns the last character matching the given [predicate], or `null` if no such character was found.\n * \n * @sample\nsamples.collections.Collections.Elements.find\n\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun\nCharSequence.findLast(predicate: (Char) -> Boolean): Char? {\n return lastOrNull(predicate)\n}\n\n * Returns the first character.\n * \n * @throws NoSuchElementException\nif the char sequence is empty.\n * \n\npublic fun CharSequence.first(): Char {\n if (isEmpty())\n throw\nNoSuchElementException("Char sequence is empty.")\n return this[0]\n}\n\n * Returns the first character matching the given [predicate].\n * @throws [NoSuchElementException] if no such character is found.\n * \n\npublic inline fun CharSequence.first(predicate: (Char) -> Boolean): Char {\n for (element in this) if (predicate(element))\n return element\n throw NoSuchElementException("Char sequence contains no character matching the\npredicate.")\n}\n\n * Returns the first non-null value produced by [transform] function being applied to characters of this char sequence in iteration order,\n * or throws [NoSuchElementException] if no non-null value was produced.\n * \n * @sample samples.collections.Collections.Transformations.firstNotNullOf\n\n * \n\n@SinceKotlin("1.5")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <R : Any>\nCharSequence.firstNotNullOf(transform:\n(Char) -> R?): R {\n return firstNotNullOfOrNull(transform) ?: throw NoSuchElementException("No element of\nthe char sequence was transformed to a non-null value.")\n}\n\n * Returns the first non-null value produced by [transform] function being applied to characters of this char sequence in iteration order,\n * or `null` if no non-null value was produced.\n * \n * @sample samples.collections.Collections.Transformations.firstNotNullOf\n\n * \n\n@SinceKotlin("1.5")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun <R : Any>\nCharSequence.firstNotNullOfOrNull(transform: (Char) -> R?): R? {\n for (element in this) {\n val result =\ntransform(element)\n if (result != null) {\n return result\n }\n }\n return null\n}\n\n * Returns the first character, or `null` if the char sequence is empty.\n * \n\npublic fun CharSequence.firstOrNull():\nChar? {\n return if (isEmpty()) null else this[0]\n}\n\n * Returns the first character matching the given [predicate], or `null` if character was not found.\n * \n\npublic inline fun CharSequence.firstOrNull(predicate:\n(Char) -> Boolean): Char? {\n for (element in this) if (predicate(element)) return element\n return\nnull\n}\n\n * Returns a character at the given [index] or the result of calling the [defaultValue] function if the [index] is out of bounds of this char sequence.\n * \n\n@kotlin.internal.InlineOnly\n\npublic inline fun\nCharSequence.getOrNull(index: Int, defaultValue: (Int) -> Char): Char {\n return if (index >= 0 && index <=\nlastIndex) get(index) else defaultValue(index)\n}\n\n * Returns a character at the given [index] or `null` if the [index] is out of bounds of this char sequence.\n * \n * @sample
```

```

samples.collections.Collections.Elements.getOrNull\n */\npublic fun CharSequence.getOrNull(index: Int): Char?
{\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns index of the first
character matching the given [predicate],
or -1 if the char sequence does not contain such character.\n */\npublic inline fun
CharSequence.indexOfFirst(predicate: (Char) -> Boolean): Int {\n for (index in indices) {\n if
(predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns index of the last
character matching the given [predicate], or -1 if the char sequence does not contain such character.\n */\npublic
inline fun CharSequence.indexOfLast(predicate: (Char) -> Boolean): Int {\n for (index in indices.reversed()) {\n
 if (predicate(this[index])) {\n return index\n }\n }\n return -1\n}\n\n/**\n * Returns the last
character.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n * \n * @sample
samples.text.Strings.last\n */\npublic fun CharSequence.last(): Char {\n if (isEmpty())\n throw
NoSuchElementException("Char sequence is empty.")\n return this[lastIndex]\n}\n\n/**\n * Returns the last
character
matching the given [predicate].\n * \n * @throws NoSuchElementException if no such character is found.\n * \n *
@sample samples.text.Strings.last\n */\npublic inline fun CharSequence.last(predicate: (Char) -> Boolean): Char {\n
 for (index in this.indices.reversed()) {\n val element = this[index]\n if (predicate(element)) return
element\n }\n throw NoSuchElementException("Char sequence contains no character matching the
predicate.")\n}\n\n/**\n * Returns the last character, or `null` if the char sequence is empty.\n * \n * @sample
samples.text.Strings.last\n */\npublic fun CharSequence.lastOrNull(): Char? {\n return if (isEmpty()) null else
this[length - 1]\n}\n\n/**\n * Returns the last character matching the given [predicate], or `null` if no such character
was found.\n * \n * @sample samples.text.Strings.last\n */\npublic inline fun CharSequence.lastOrNull(predicate:
(Char) -> Boolean): Char? {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns a
random character from this char sequence.\n * \n * @throws NoSuchElementException if this char sequence is
empty.\n */\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.random(): Char
{\n return random(Random)\n}\n\n/**\n * Returns a random character from this char sequence using the specified
source of randomness.\n * \n * @throws NoSuchElementException if this char sequence is empty.\n */\n@SinceKotlin("1.3")\npublic fun CharSequence.random(random: Random): Char {\n if (isEmpty())\n throw
NoSuchElementException("Char sequence is empty.")\n return get(random.nextInt(length))\n}\n\n/**\n *
Returns a random character from this char sequence, or `null` if this char sequence is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.randomOrNull():
Char? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random character from this char sequence
using the specified source of randomness, or `null` if this char sequence is empty.\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic fun
CharSequence.randomOrNull(random: Random): Char? {\n if (isEmpty())\n return null\n return
get(random.nextInt(length))\n}\n\n/**\n * Returns the single character, or throws an exception if the char sequence
is empty or has more than one character.\n */\npublic fun CharSequence.single(): Char {\n return when (length)
{\n 0 -> throw NoSuchElementException("Char sequence is empty.")\n 1 -> this[0]\n else -> throw
IllegalArgumentException("Char sequence has more than one element.")\n }\n}\n\n/**\n * Returns the single
character matching the given [predicate], or throws exception if there is no or more than one matching character.\n */\npublic inline fun CharSequence.single(predicate:
(Char) -> Boolean): Char {\n var single: Char? = null\n var found = false\n for (element in this) {\n if
(predicate(element)) {\n if (found) throw IllegalArgumentException("Char sequence contains more than one
matching element.")\n single = element\n found = true\n }\n }\n if (!found) throw
NoSuchElementException("Char sequence contains no character matching the predicate.")\n}\n\n@Suppress("UNCHECKED_CAST")\nreturn single as Char\n}\n\n/**\n * Returns single character, or `null` if
the char sequence is empty or has more than one character.\n */\npublic fun CharSequence.singleOrNull(): Char?

```

```

{\n return if (length == 1) this[0] else null\n}\n\n/**\n * Returns the single character matching the given
[predicate], or `null` if character was not found or more than one character was found.\n */\npublic inline fun
CharSequence.singleOrNull(predicate: (Char) -> Boolean): Char? {\n var single:
Char? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n if (found)
return null\n single = element\n found = true\n }\n }\n if (!found) return null\n return
single\n}\n\n/**\n * Returns a subsequence of this char sequence with the first [n] characters removed.\n */\n *
@throws IllegalArgumentException if [n] is negative.\n */\n * @sample samples.text.Strings.drop\n */\npublic fun
CharSequence.drop(n: Int): CharSequence {\n require(n >= 0) { \"Requested character count $n is less than zero.\"
}\n return subSequence(n.coerceAtMost(length), length)\n}\n\n/**\n * Returns a string with the first [n] characters
removed.\n */\n * @throws IllegalArgumentException if [n] is negative.\n */\n * @sample
samples.text.Strings.drop\n */\npublic fun String.drop(n: Int): String {\n require(n >= 0) { \"Requested character
count $n is less than zero.\" }\n return substring(n.coerceAtMost(length))\n}\n\n/**\n
* Returns a subsequence of this char sequence with the last [n] characters removed.\n */\n * @throws
IllegalArgumentException if [n] is negative.\n */\n * @sample samples.text.Strings.drop\n */\npublic fun
CharSequence.dropLast(n: Int): CharSequence {\n require(n >= 0) { \"Requested character count $n is less than
zero.\" }\n return take((length - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a string with the last [n] characters
removed.\n */\n * @throws IllegalArgumentException if [n] is negative.\n */\n * @sample
samples.text.Strings.drop\n */\npublic fun String.dropLast(n: Int): String {\n require(n >= 0) { \"Requested
character count $n is less than zero.\" }\n return take((length - n).coerceAtLeast(0))\n}\n\n/**\n * Returns a
subsequence of this char sequence containing all characters except last characters that satisfy the given [predicate].\n
*/\n * @sample samples.text.Strings.drop\n */\npublic inline fun CharSequence.dropLastWhile(predicate: (Char) ->
Boolean):
CharSequence {\n for (index in lastIndex downTo 0)\n if (!predicate(this[index]))\n return
subSequence(0, index + 1)\n return \"\"\n}\n\n/**\n * Returns a string containing all characters except last
characters that satisfy the given [predicate].\n */\n * @sample samples.text.Strings.drop\n */\npublic inline fun
String.dropLastWhile(predicate: (Char) -> Boolean): String {\n for (index in lastIndex downTo 0)\n if
(!predicate(this[index]))\n return substring(0, index + 1)\n return \"\"\n}\n\n/**\n * Returns a subsequence
of this char sequence containing all characters except first characters that satisfy the given [predicate].\n */\n *
@sample samples.text.Strings.drop\n */\npublic inline fun CharSequence.dropWhile(predicate: (Char) -> Boolean):
CharSequence {\n for (index in this.indices)\n if (!predicate(this[index]))\n return subSequence(index,
length)\n return \"\"\n}\n\n/**\n * Returns a string containing
all characters except first characters that satisfy the given [predicate].\n */\n * @sample samples.text.Strings.drop\n
*/\npublic inline fun String.dropWhile(predicate: (Char) -> Boolean): String {\n for (index in this.indices)\n if
(!predicate(this[index]))\n return substring(index)\n return \"\"\n}\n\n/**\n * Returns a char sequence
containing only those characters from the original char sequence that match the given [predicate].\n */\n * @sample
samples.text.Strings.filter\n */\npublic inline fun CharSequence.filter(predicate: (Char) -> Boolean): CharSequence
{\n return filterTo(StringBuilder(), predicate)\n}\n\n/**\n * Returns a string containing only those characters from
the original string that match the given [predicate].\n */\n * @sample samples.text.Strings.filter\n */\npublic inline
fun String.filter(predicate: (Char) -> Boolean): String {\n return filterTo(StringBuilder(),
predicate).toString()\n}\n\n/**\n * Returns a char sequence containing
only those characters from the original char sequence that match the given [predicate].\n */\n * @param [predicate]
function that takes the index of a character and the character itself\n */\n * and returns the result of predicate
evaluation on the character.\n */\n * @sample samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun
CharSequence.filterIndexed(predicate: (index: Int, Char) -> Boolean): CharSequence {\n return
filterIndexedTo(StringBuilder(), predicate)\n}\n\n/**\n * Returns a string containing only those characters from the
original string that match the given [predicate].\n */\n * @param [predicate] function that takes the index of a character
and the character itself\n */\n * and returns the result of predicate evaluation on the character.\n */\n * @sample
samples.collections.Collections.Filtering.filterIndexed\n */\npublic inline fun String.filterIndexed(predicate: (index:

```

```

Int, Char) -> Boolean): String {
 return filterIndexedTo(StringBuilder(), predicate).toString()
}

* Appends all characters matching the given [predicate] to the given [destination].
@param [predicate] function that takes the index of a character and the character itself
and returns the result of predicate evaluation on the character.
@sample samples.collections.Collections.Filtering.filterIndexedTo

public inline fun <C : Appendable> CharSequence.filterIndexedTo(
 destination: C, predicate: (index: Int, Char) -> Boolean): C {
 forEachIndexed { index, element ->
 if (predicate(index, element)) destination.append(element)
 }
 return destination
}

* Returns a char sequence containing only those characters from the original char
sequence that do not match the given [predicate].
@sample samples.text.Strings.filterNot

public inline fun CharSequence.filterNot(
 predicate: (Char) -> Boolean): CharSequence {
 return filterNotTo(StringBuilder(), predicate)
}

* Returns a string containing only those characters from the original string that do not match the given [predicate].
@sample samples.text.Strings.filterNot

public inline fun String.filterNot(
 predicate: (Char) -> Boolean): String {
 return filterNotTo(StringBuilder(), predicate).toString()
}

* Appends all characters not matching the given [predicate] to the given [destination].
@sample samples.collections.Collections.Filtering.filterTo

public inline fun <C : Appendable> CharSequence.filterNotTo(
 destination: C, predicate: (Char) -> Boolean): C {
 for (element in this) if (!predicate(element)) destination.append(element)
 return destination
}

* Appends all characters matching the given [predicate] to the given [destination].
@sample samples.collections.Collections.Filtering.filterTo

public inline fun <C : Appendable> CharSequence.filterTo(
 destination: C, predicate: (Char) -> Boolean): C {
 for (index in 0 until length) {
 val element = get(index)
 if (predicate(element)) destination.append(element)
 }
 return destination
}

* Returns a char sequence containing characters of the original char sequence at the specified range of [indices].
public fun CharSequence.slice(
 indices: IntRange): CharSequence {
 if (indices.isEmpty()) return ""
 return subSequence(indices)
}

* Returns a string containing characters of the original string at the specified range of [indices].
public fun String.slice(
 indices: IntRange): String {
 if (indices.isEmpty()) return ""
 return substring(indices)
}

* Returns a char sequence containing characters of the original char sequence at specified [indices].
public fun CharSequence.slice(
 indices: Iterable<Int>): CharSequence {
 val size = indices.collectionSizeOrDefault(10)
 if (size == 0) return ""
 val result = StringBuilder(size)
 for (i in indices) {
 result.append(get(i))
 }
 return result
}

* Returns a string containing characters of the original string at specified [indices].
@kotlin.internal
public inline fun String.slice(
 indices: Iterable<Int>): String {
 return (this as CharSequence).slice(indices).toString()
}

* Returns a subsequence of this char sequence containing the first [n] characters from this char sequence, or the entire char sequence if this char sequence is shorter.
@throws IllegalArgumentException if [n] is negative.
@sample samples.text.Strings.take

public fun CharSequence.take(
 n: Int): CharSequence {
 require(n >= 0) { "Requested character count $n is less than zero." }
 return subSequence(0, n.coerceAtMost(length))
}

* Returns a string containing the first [n] characters from this string, or the entire string if this string is shorter.
@throws IllegalArgumentException if [n] is negative.
@sample samples.text.Strings.take

public fun String.take(
 n: Int): String {
 require(n >= 0) { "Requested character count $n is less than zero." }
 return substring(0, n.coerceAtMost(length))
}

* Returns a subsequence of this char sequence containing the last [n] characters from this char sequence, or the entire char sequence if this char sequence is shorter.
@throws IllegalArgumentException if [n] is negative.
@sample samples.text.Strings.take

public fun CharSequence.takeLast(
 n: Int): CharSequence {
 require(n >= 0) { "Requested character count $n is less than zero." }
 val length = length
 return subSequence(length - n.coerceAtMost(length), length)
}

* Returns a string containing the last [n] characters from this string, or the entire string if this string is shorter.
@throws IllegalArgumentException if [n] is negative.
@sample samples.text.Strings.take

public fun String.takeLast(
 n: Int): String {
 require(n >= 0) { "Requested character

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count $n is less than zero.} } \n val length = length\n return substring(length -
n.coerceAtMost(length))\n}\n\n/**\n * Returns a subsequence of this char sequence containing last characters that
satisfy the given [predicate].\n * \n * @sample samples.text.Strings.take\n */\npublic inline fun
CharSequence.takeLastWhile(predicate: (Char) -> Boolean): CharSequence {\n for (index in lastIndex downTo 0)
{\n if (!predicate(this[index])) {\n return subSequence(index + 1, length)\n }\n }\n return
subSequence(0, length)\n}\n\n/**\n * Returns a string containing last characters that satisfy the given [predicate].\n
* \n * @sample samples.text.Strings.take\n */\npublic inline fun String.takeLastWhile(predicate: (Char) ->
Boolean): String {\n for (index in lastIndex downTo 0) {\n if (!predicate(this[index])) {\n return
substring(index + 1)\n }\n }\n return this\n}\n\n/**\n * Returns a subsequence of this char sequence
containing the first characters that satisfy the given [predicate].\n * \n * @sample samples.text.Strings.take\n
*/\npublic inline fun CharSequence.takeWhile(predicate: (Char) -> Boolean): CharSequence {\n for (index in 0
until length)\n if (!predicate(get(index))) {\n return subSequence(0, index)\n }\n return
subSequence(0, length)\n}\n\n/**\n * Returns a string containing the first characters that satisfy the given
[predicate].\n * \n * @sample samples.text.Strings.take\n */\npublic inline fun String.takeWhile(predicate: (Char) ->
Boolean): String {\n for (index in 0 until length)\n if (!predicate(get(index))) {\n return substring(0,
index)\n }\n return this\n}\n\n/**\n * Returns a char sequence with characters in reversed order.\n */\npublic
fun CharSequence.reversed(): CharSequence {\n return StringBuilder(this).reverse()\n}\n\n/**\n * Returns a string
with characters in reversed order.\n */\n@kotlin.internal.InlineOnly\npublic
inline fun String.reversed(): String {\n return (this as CharSequence).reversed().toString()\n}\n\n/**\n * Returns a
[Map] containing key-value pairs provided by [transform] function\n * applied to characters of the given char
sequence.\n * \n * If any of two pairs would have the same key the last one gets added to the map.\n * \n * The
returned map preserves the entry iteration order of the original char sequence.\n * \n * @sample
samples.text.Strings.associate\n */\npublic inline fun <K, V> CharSequence.associate(transform: (Char) -> Pair<K,
V>): Map<K, V> {\n val capacity = mapCapacity(length).coerceAtLeast(16)\n return
associateTo(LinkedHashMap<K, V>(capacity), transform)\n}\n\n/**\n * Returns a [Map] containing the characters
from the given char sequence indexed by the key\n * returned from [keySelector] function applied to each
character.\n * \n * If any two characters would have the same key returned by [keySelector] the last one gets added
to the map.\n * \n * The returned map preserves the entry iteration order of the original char sequence.\n * \n * @sample
samples.text.Strings.associateBy\n */\npublic inline fun <K> CharSequence.associateBy(keySelector: (Char) -> K):
Map<K, Char> {\n val capacity = mapCapacity(length).coerceAtLeast(16)\n return
associateByTo(LinkedHashMap<K, Char>(capacity), keySelector)\n}\n\n/**\n * Returns a [Map] containing the
values provided by [valueTransform] and indexed by [keySelector] functions applied to characters of the given char
sequence.\n * \n * If any two characters would have the same key returned by [keySelector] the last one gets added
to the map.\n * \n * The returned map preserves the entry iteration order of the original char sequence.\n * \n *
@sample samples.text.Strings.associateByWithValueTransform\n */\npublic inline fun <K, V>
CharSequence.associateBy(keySelector: (Char) -> K, valueTransform: (Char) -> V): Map<K, V> {\n val capacity
= mapCapacity(length).coerceAtLeast(16)\n return
associateByTo(LinkedHashMap<K, V>(capacity), keySelector, valueTransform)\n}\n\n/**\n * Populates
and returns the [destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector]
function applied to each character of the given char sequence\n * and value is the character itself.\n * \n * If any two
characters would have the same key returned by [keySelector] the last one gets added to the map.\n * \n * @sample
samples.text.Strings.associateByTo\n */\npublic inline fun <K, M : MutableMap<in K, in Char>>
CharSequence.associateByTo(destination: M, keySelector: (Char) -> K): M {\n for (element in this) {\n
destination.put(keySelector(element), element)\n }\n return destination\n}\n\n/**\n * Populates and returns the
[destination] mutable map with key-value pairs,\n * where key is provided by the [keySelector] function and\n * and
value is provided by the [valueTransform] function applied to characters of the given char sequence.\n * \n *

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\* If any two characters would have the same key returned by [keySelector] the last one gets added to the map.\n \*  
 \n \* @sample samples.text.Strings.associateByToWithValueTransform\n \*  
 \npublic inline fun <K, V, M : MutableMap<in K, in V>> CharSequence.associateByTo(destination: M, keySelector: (Char) -> K, valueTransform: (Char) -> V): M {\n for (element in this) {\n destination.put(keySelector(element), valueTransform(element))\n }\n return destination\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs\n \* provided by [transform] function applied to each character of the given char sequence.\n \* \n \* If any of two pairs would have the same key the last one gets added to the map.\n \* \n \* @sample samples.text.Strings.associateTo\n \*  
 \npublic inline fun <K, V, M : MutableMap<in K, in V>> CharSequence.associateTo(destination: M, transform: (Char) -> Pair<K, V>): M {\n for (element in this) {\n destination += transform(element)\n }\n return destination\n}\n\n/\*\*\n \* Returns a [Map] where keys are characters from the given char sequence and values are\n \* produced by the [valueSelector] function applied to each character.\n \* \n \* If any two characters are equal, the last one gets added to the map.\n \* \n \* The returned map preserves the entry iteration order of the original char sequence.\n \* \n \* @sample samples.text.Strings.associateWith\n \*  
 \n@SinceKotlin("1.3")\npublic inline fun <V> CharSequence.associateWith(valueSelector: (Char) -> V): Map<Char, V> {\n val result = LinkedHashMap<Char, V>(mapCapacity(length.coerceAtMost(128)).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/\*\*\n \* Populates and returns the [destination] mutable map with key-value pairs for each character of the given char sequence,\n \* where key is the character itself and value is provided by the [valueSelector] function applied to that key.\n \* \n \* If any two characters are equal, the last one overwrites the former value in the map.\n \* \n \* @sample samples.text.Strings.associateWithTo\n \*  
 \n@SinceKotlin("1.3")\npublic inline fun <V, M : MutableMap<in Char, in V>> CharSequence.associateWithTo(destination: M, valueSelector: (Char) -> V): M {\n for (element in this) {\n destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/\*\*\n \* Appends all characters to the given [destination] collection.\n \*  
 \npublic fun <C : MutableCollection<in Char>> CharSequence.toCollection(destination: C): C {\n for (item in this) {\n destination.add(item)\n }\n return destination\n}\n\n/\*\*\n \* Returns a new [HashSet] of all characters.\n \*  
 \npublic fun CharSequence.toHashSet(): HashSet<Char> {\n return toCollection(HashSet<Char>(mapCapacity(length.coerceAtMost(128))))\n}\n\n/\*\*\n \* Returns a [List] containing all characters.\n \*  
 \npublic fun CharSequence.toList(): List<Char> {\n return when (length) {\n 0 -> emptyList()\n 1 -> listOf(this[0])\n else -> this.toMutableList()\n }\n}\n\n/\*\*\n \* Returns a new [MutableList] filled with all characters of this char sequence.\n \*  
 \npublic fun CharSequence.toMutableList(): MutableList<Char> {\n return toCollection(ArrayList<Char>(length))\n}\n\n/\*\*\n \* Returns a [Set] of all characters.\n \* \n \* The returned set preserves the element iteration order of the original char sequence.\n \*  
 \npublic fun CharSequence.toSet(): Set<Char> {\n return when (length) {\n 0 -> emptySet()\n 1 -> setOf(this[0])\n else -> toCollection(LinkedHashSet<Char>(mapCapacity(length.coerceAtMost(128))))\n }\n}\n\n/\*\*\n \* Returns a single list of all elements yielded from results of [transform] function being invoked on each character of original char sequence.\n \* \n \* @sample samples.collections.Collections.Transformations.flatMap\n \*  
 \npublic inline fun <R> CharSequence.flatMap(transform: (Char) -> Iterable<R>): List<R> {\n return flatMapTo(ArrayList<R>(), transform)\n}\n\n/\*\*\n \* Returns a single list of all elements yielded from results of [transform] function being invoked on each character\n \* and its index in the original char sequence.\n \* \n \* @sample samples.collections.Collections.Transformations.flatMapIndexed\n \*  
 \n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@kotlin.jvm.JvmName("flatMapIndexedIterable")\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharSequence.flatMapIndexed(transform: (index: Int, Char) -> Iterable<R>): List<R> {\n return flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n/\*\*\n \* Appends all elements yielded from results of [transform] function being invoked on each character\n \* and its index in the original char sequence, to the given [destination].\n \*  
 \n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@kotlin.jvm.JvmName("\flatMapIndexedIterableTo")\n@kotlin.internal.InlineOnly\npubli
c
inline fun <R, C : MutableCollection<in R>> CharSequence.flatMapIndexedTo(destination: C, transform: (index:
Int, Char) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++,
element)\n destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Appends all elements yielded from
results of [transform] function being invoked on each character of original char sequence, to the given
[destination].\n */\n\npublic inline fun <R, C : MutableCollection<in R>> CharSequence.flatMapTo(destination: C,
transform: (Char) -> Iterable<R>): C {\n for (element in this) {\n val list = transform(element)\n
destination.addAll(list)\n }\n return destination\n}\n\n/**\n * Groups characters of the original char sequence by
the key returned by the given [keySelector] function\n * applied to each character and returns a map where each
group key is associated with
a list of corresponding characters.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original char sequence.\n * \n * @sample samples.collections.Collections.Transformations.groupBy\n
*/\n\npublic inline fun <K> CharSequence.groupBy(keySelector: (Char) -> K): Map<K, List<Char>> {\n return
groupByTo(LinkedHashMap<K, MutableList<Char>>(), keySelector)\n}\n\n/**\n * Groups values returned by the
[valueTransform] function applied to each character of the original char sequence\n * by the key returned by the
given [keySelector] function applied to the character\n * and returns a map where each group key is associated with
a list of corresponding values.\n * \n * The returned map preserves the entry iteration order of the keys produced
from the original char sequence.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\n\npublic inline fun <K, V>
CharSequence.groupBy(keySelector: (Char) -> K, valueTransform: (Char)
-> V): Map<K, List<V>> {\n return groupByTo(LinkedHashMap<K, MutableList<V>>(), keySelector,
valueTransform)\n}\n\n/**\n * Groups characters of the original char sequence by the key returned by the given
[keySelector] function\n * applied to each character and puts to the [destination] map each group key associated
with a list of corresponding characters.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupBy\n */\n\npublic inline fun <K, M : MutableMap<in K,
MutableList<Char>>> CharSequence.groupByTo(destination: M, keySelector: (Char) -> K): M {\n for (element in
this) {\n val key = keySelector(element)\n val list = destination.getOrPut(key) { ArrayList<Char>() }\n
list.add(element)\n }\n return destination\n}\n\n/**\n * Groups values returned by the [valueTransform] function
applied to each character of the original char sequence\n * by the key returned by the given [keySelector] function
applied
to the character\n * and puts to the [destination] map each group key associated with a list of corresponding
values.\n * \n * @return The [destination] map.\n * \n * @sample
samples.collections.Collections.Transformations.groupByKeysAndValues\n */\n\npublic inline fun <K, V, M :
MutableMap<in K, MutableList<V>>> CharSequence.groupByTo(destination: M, keySelector: (Char) -> K,
valueTransform: (Char) -> V): M {\n for (element in this) {\n val key = keySelector(element)\n val list =
destination.getOrPut(key) { ArrayList<V>() }\n list.add(valueTransform(element))\n }\n return
destination\n}\n\n/**\n * Creates a [Grouping] source from a char sequence to be used later with one of group-and-
fold operations\n * using the specified [keySelector] function to extract a key from each character.\n * \n * @sample
samples.collections.Grouping.groupingByEachCount\n */\n\n@SinceKotlin("1.1")\n\npublic inline fun <K>
CharSequence.groupingBy(crossinline keySelector: (Char)
-> K): Grouping<Char, K> {\n return object : Grouping<Char, K> {\n override fun sourceIterator():
Iterator<Char> = this@groupingBy.iterator()\n override fun keyOf(element: Char): K = keySelector(element)\n
 }\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each character
in the original char sequence.\n * \n * @sample samples.text.Strings.map\n */\n\npublic inline fun <R>
CharSequence.map(transform: (Char) -> R): List<R> {\n return mapTo(ArrayList<R>(length),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
character and its index in the original char sequence.\n * \n * @param [transform] function that takes the index of a

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character and the character itself\n \* and returns the result of the transform applied to the character.\n \*/\npublic inline fun <R> CharSequence.mapIndexed(transform: (index: Int, Char) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(length), transform)\n}\n\n/\*\*\n \* Returns a list containing only the non-null results of applying the given [transform] function\n \* to each character and its index in the original char sequence.\n \* @param [transform] function that takes the index of a character and the character itself\n \* and returns the result of the transform applied to the character.\n \*/\npublic inline fun <R : Any> CharSequence.mapIndexedNotNull(transform: (index: Int, Char) -> R?): List<R> {\n return mapIndexedNotNullTo(ArrayList<R>(), transform)\n}\n\n/\*\*\n \* Applies the given [transform] function to each character and its index in the original char sequence\n \* and appends only the non-null results to the given [destination].\n \* @param [transform] function that takes the index of a character and the character itself\n \* and returns the result of the transform applied to the character.\n \*/\npublic inline fun <R : Any, C : MutableCollection<in R>> CharSequence.mapIndexedNotNullTo(destination: C, transform: (index: Int, Char) -> R?): C {\n forEachIndexed { index, element -> transform(index, element)?.let { destination.add(it) } }\n return destination\n}\n\n/\*\*\n \* Applies the given [transform] function to each character and its index in the original char sequence\n \* and appends the results to the given [destination].\n \* @param [transform] function that takes the index of a character and the character itself\n \* and returns the result of the transform applied to the character.\n \*/\npublic inline fun <R, C : MutableCollection<in R>> CharSequence.mapIndexedTo(destination: C, transform: (index: Int, Char) -> R): C {\n var index = 0\n for (item in this)\n destination.add(transform(index++, item))\n return destination\n}\n\n/\*\*\n \* Returns a list containing only the non-null results of applying the given [transform] function\n \* to each character in the original char sequence.\n \* \n \* @sample samples.collections.Collections.Transformations.mapNotNull\n \*/\npublic inline fun <R : Any> CharSequence.mapNotNull(transform: (Char) -> R?): List<R> {\n return mapNotNullTo(ArrayList<R>(), transform)\n}\n\n/\*\*\n \* Applies the given [transform] function to each character in the original char sequence\n \* and appends only the non-null results to the given [destination].\n \*/\npublic inline fun <R : Any, C : MutableCollection<in R>> CharSequence.mapNotNullTo(destination: C, transform: (Char) -> R?): C {\n forEach { element -> transform(element)?.let { destination.add(it) } }\n return destination\n}\n\n/\*\*\n \* Applies the given [transform] function to each character of the original char sequence\n \* and appends the results to the given [destination].\n \*/\npublic inline fun <R, C : MutableCollection<in R>> CharSequence.mapTo(destination: C, transform: (Char) -> R): C {\n for (item in this)\n destination.add(transform(item))\n return destination\n}\n\n/\*\*\n \* Returns a lazy [Iterable] that wraps each character of the original char sequence\n \* into an [IndexedValue] containing the index of that character and the character itself.\n \*/\npublic fun CharSequence.withIndex(): Iterable<IndexedValue<Char>> {\n return IndexingIterable { iterator() }\n}\n\n/\*\*\n \* Returns `true` if all characters match the given [predicate].\n \* \n \* Note that if the char sequence contains no characters, the function returns `true`\n \* because there are no characters in it that do not match the predicate.\n \* See a more detailed explanation of this logic concept in [\"Vacuous truth\"]([https://en.wikipedia.org/wiki/Vacuous\\_truth](https://en.wikipedia.org/wiki/Vacuous_truth)) article.\n \* \n \* @sample samples.collections.Collections.Aggregates.all\n \*/\npublic inline fun CharSequence.all(predicate: (Char) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return false\n return true\n}\n\n/\*\*\n \* Returns `true` if char sequence has at least one character.\n \* \n \* @sample samples.collections.Collections.Aggregates.any\n \*/\npublic fun CharSequence.any(): Boolean {\n return !isEmpty()\n}\n\n/\*\*\n \* Returns `true` if at least one character matches the given [predicate].\n \* \n \* @sample samples.collections.Collections.Aggregates.anyWithPredicate\n \*/\npublic inline fun CharSequence.any(predicate: (Char) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return true\n return false\n}\n\n/\*\*\n \* Returns the length of this char sequence.\n \* \n \* @kotlin.internal.InlineOnly\n \*/\npublic inline fun CharSequence.count(): Int {\n return length\n}\n\n/\*\*\n \* Returns the number of characters matching the given [predicate].\n \*/\npublic inline fun CharSequence.count(predicate: (Char) -> Boolean): Int {\n var count = 0\n for (element in this) if

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(predicate(element)) ++count\n return count\n}\n\n/**\n * Accumulates value starting with [initial] value and
applying [operation] from left to right\n * to current accumulator value and each character.\n * \n * Returns the
specified [initial] value if the char sequence
is empty.\n * \n * @param [operation] function that takes current accumulator value and a character, and calculates
the next accumulator value.\n */\npublic inline fun <R> CharSequence.fold(initial: R, operation: (acc: R, Char) ->
R): R {\n var accumulator = initial\n for (element in this) accumulator = operation(accumulator, element)\n
return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left
to right\n * to current accumulator value and each character with its index in the original char sequence.\n * \n *
Returns the specified [initial] value if the char sequence is empty.\n * \n * @param [operation] function that takes
the index of a character, current accumulator value\n * and the character itself, and calculates the next accumulator
value.\n */\npublic inline fun <R> CharSequence.foldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R):
R {\n var index = 0\n var accumulator = initial\n for (element
in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from right to left\n * to each character and current
accumulator value.\n * \n * Returns the specified [initial] value if the char sequence is empty.\n * \n * @param
[operation] function that takes a character and current accumulator value, and calculates the next accumulator
value.\n */\npublic inline fun <R> CharSequence.foldRight(initial: R, operation: (Char, acc: R) -> R): R {\n var
index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(get(index--),
accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying
[operation] from right to left\n * to each character with its index in the original char sequence and current
accumulator value.\n * \n * Returns the specified [initial] value if the
char sequence is empty.\n * \n * @param [operation] function that takes the index of a character, the character
itself\n * and current accumulator value, and calculates the next accumulator value.\n */\npublic inline fun <R>
CharSequence.foldRightIndexed(initial: R, operation: (index: Int, Char, acc: R) -> R): R {\n var index =
lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Performs the given [action] on each
character.\n */\npublic inline fun CharSequence.forEach(action: (Char) -> Unit): Unit {\n for (element in this)
action(element)\n}\n\n/**\n * Performs the given [action] on each character, providing sequential index with the
character.\n * \n * @param [action] function that takes the index of a character and the character itself\n * and performs
the action on the character.\n */\npublic inline fun CharSequence.forEachIndexed(action: (index:
Int, Char) -> Unit): Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n/**\n * Returns the
largest character.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n */\n\n/**\n * @SinceKotlin("1.7")\n */\n@kotlin.jvm.JvmName("maxOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun CharSequence.max(): Char {\n if (isEmpty()) throw NoSuchElementException()\n var max =
this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns the first character yielding the largest value of the given function.\n * \n * @throws
NoSuchElementException if the char sequence is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.maxBy\n */\n\n/**\n * @SinceKotlin("1.7")\n */\n@kotlin.jvm.JvmName("maxByOrThrow")\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> CharSequence.maxBy(selector: (Char) -> R): Char {\n if
(isEmpty()) throw NoSuchElementException()\n
 var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue
= selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue <
v) {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the first
character yielding the largest value of the given function or `null` if there are no characters.\n * \n * @sample
samples.collections.Collections.Aggregates.maxByOrNull\n */\n\n/**\n * @SinceKotlin("1.4")\n */\npublic inline fun <R :
Comparable<R>> CharSequence.maxByOrNull(selector: (Char) -> R): Char? {\n if (isEmpty()) return null\n var
maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue =

```

```

selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)\n {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the largest value among all values\n * produced by [selector] function\n * applied to each character in the char sequence.\n * \n * If any of values produced\n * by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the char\n * sequence is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOf(selector: (Char) ->\nDouble): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return\n maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each character in the char sequence.\n * \n * If any of values produced\n * by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the char\n * sequence is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOf(selector: (Char) ->\nFloat): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i\n in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return\n maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each character in the char sequence.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nCharSequence.maxOf(selector:\n(Char) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for\n (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return\n maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each character in the char sequence or `null` if there are no characters.\n * \n * If any of values produced\n * by [selector] function is `NaN`, the returned result is `NaN`.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOfOrNull(selector:\n(Char) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return\n maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each character in the char sequence or `null` if there are no characters.\n * \n * If any of values produced\n * by [selector] function is `NaN`, the returned result is `NaN`.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.maxOfOrNull(selector:\n(Char) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in\n 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return\n maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to\n * each character in the char sequence or `null` if there are no characters.\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic\ninline fun <R : Comparable<R>> CharSequence.maxOfOrNull(selector: (Char) -> R): R? {\n if (isEmpty()) return\n null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if\n (maxValue < v) {\n maxValue = v\n }\n }\n return\n maxValue\n}\n\n/**\n * Returns the largest value\n * according to the provided [comparator]\n * among all values produced by [selector] function applied to each\n * character in the char sequence.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n */

```

```

*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R> CharSequence.maxOfWith(comparator:
Comparator<in R>, selector: (Char) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var
maxValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n
maxValue = v\n }\n }\n return maxValue}\n\n/**\n * Returns the largest value according to the provided
[comparator]\n * among all values produced by [selector] function applied to each character in the char sequence or
`null` if there are no characters.\n
*^@SinceKotlin("1.4")@OptIn(kotlin.experimental.ExperimentalTypeInference::class)@OverloadResolution
ByLambdaReturnType@kotlin.internal.InlineOnly\npublic inline fun <R>
CharSequence.maxOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue}\n\n/**\n * Returns the largest character or `null` if there are no characters.\n
*^@SinceKotlin("1.4")\npublic
fun CharSequence.maxOrNull(): Char? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max}\n\n/**\n * Returns the first
character having the largest value according to the provided [comparator].\n * \n * @throws
NoSuchElementException if the char sequence is empty.\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("maxWithOrThrow")@Suppress("CONFLICTING_OVER
LOADS")\npublic fun CharSequence.maxWith(comparator: Comparator<in Char>): Char {\n if (isEmpty())
throw NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max}\n\n/**\n * Returns the first character having the
largest value according to the provided [comparator] or `null` if there are no characters.\n
*^@SinceKotlin("1.4")\npublic fun CharSequence.maxWithOrNull(comparator:
Comparator<in Char>): Char? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max}\n\n/**\n * Returns the
smallest character.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("minOrThrow")@Suppress("CONFLICTING_OVERLOA
DS")\npublic fun CharSequence.min(): Char {\n if (isEmpty()) throw NoSuchElementException()\n var min =
this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min}\n\n/**\n * Returns the first character yielding the smallest value of the given function.\n * \n * @throws
NoSuchElementException if the char sequence is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("minByOrThrow")@Suppress("CONFLICTING_OVERLO
ADS")\npublic
inline fun <R : Comparable<R>> CharSequence.minBy(selector: (Char) -> R): Char {\n if (isEmpty()) throw
NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0)
return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v =
selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return
minElem}\n\n/**\n * Returns the first character yielding the smallest value of the given function or `null` if there
are no characters.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n
*^@SinceKotlin("1.4")\npublic inline fun <R : Comparable<R>> CharSequence.minByOrNull(selector: (Char) -
> R): Char? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if
(lastIndex == 0) return minElem\n var minValue = selector(minElem)\n
for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem
= e\n minValue = v\n }\n }\n return minElem}\n\n/**\n * Returns the smallest value among all
values produced by [selector] function\n * applied to each character in the char sequence.\n * \n * If any of values
produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException

```

if the char sequence is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOf(selector: (Char) ->\nDouble): Double {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\nminValue\n}\n\n/**\n * Returns the smallest
```

value among all values produced by [selector] function\n \* applied to each character in the char sequence.\n \* \n \*\n \* If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n \* \n \* @throws\nNoSuchElementException if the char sequence is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOf(selector: (Char) ->\nFloat): Float {\n if (isEmpty()) throw NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return\nminValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to
```

each character in the char sequence.\n \* \n \* @throws NoSuchElementException if the char sequence is empty.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic
```

```
inline fun <R : Comparable<R>> CharSequence.minOf(selector: (Char) -> R): R {\n if (isEmpty()) throw\nNoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =\nselector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each character in the char\n * sequence or `null` if there are no characters.\n * \n * If any of values produced by [selector] function is `NaN`, the\n * returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOfOrNull(selector:\n(Char) -> Double): Double? {\n if (isEmpty()) return null\n var\nminValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =\nminOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced\n * by [selector] function\n * applied to each character in the char sequence or `null` if there are no characters.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.minOfOrNull(selector:\n(Char) -> Float): Float? {\n if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex)\n{\n val v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each character\n * in the char sequence or `null` if there are no characters.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>>\nCharSequence.minOfOrNull(selector: (Char) -> R): R? {\n if (isEmpty()) return null\n var minValue =\nselector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value according to the provided\n * [comparator]\n * among all values produced by [selector] function applied to each character in the char sequence.\n * \n * @throws NoSuchElementException if the char sequence is empty.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@kotlin.internal.InlineOnly\npublic inline fun <R> CharSequence.minOfWith(comparator:\nComparator<in R>, selector: (Char) -> R): R {\n if (isEmpty()) throw NoSuchElementException()\n var\nminValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if\n(comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n *
```



Returns the smallest value according to the provided [comparator] among all values produced by [selector] function applied to each character in the char sequence or `null` if there are no characters.

```

*\/n@SinceKotlin("1.4")\/n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\/n@OverloadResolutionByLambdaReturnType\/n@kotlin.internal.InlineOnly\/npublic inline fun <R>
CharSequence.minOfWithOrNull(comparator: Comparator<in R>, selector: (Char) -> R): R? {
 if (isEmpty())
 return null
 var minValue = selector(this[0])
 for (i in 1..lastIndex) {
 val v = selector(this[i])
 if (comparator.compare(minValue, v) > 0)
 minValue = v
 }
 return minValue
}

```

\* Returns the smallest character or `null` if there are no characters.

```

*\/n@SinceKotlin("1.4")\/npublic fun CharSequence.minOrNull(): Char? {
 if (isEmpty())
 return null
 var min = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (min > e)
 min = e
 }
 return min
}

```

\* Returns the first character having the smallest value according to the provided [comparator].

```

*\/n@SinceKotlin("1.7")\/n@kotlin.jvm.JvmName("minWithOrThrow")\/n@Suppress("CONFLICTING_OVERLOADS")\/npublic fun CharSequence.minWith(comparator: Comparator<in Char>): Char {
 if (isEmpty())
 throw NoSuchElementException()
 var min = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0)
 min = e
 }
 return min
}

```

\* Returns the first character having the smallest value according to the provided [comparator] or `null` if there are no characters.

```

*\/n@SinceKotlin("1.4")\/npublic fun CharSequence.minWithOrNull(comparator: Comparator<in Char>): Char? {
 if (isEmpty())
 return null
 var min = this[0]
 for (i in 1..lastIndex) {
 val e = this[i]
 if (comparator.compare(min, e) > 0)
 min = e
 }
 return min
}

```

\* Returns `true` if the char sequence has no characters.

```

*\/n@sample samples.collections.Collections.Aggregates.none\/npublic fun
CharSequence.none(): Boolean {
 return isEmpty()
}

```

\* Returns `true` if no characters match the given [predicate].

```

*\/n@sample samples.collections.Collections.Aggregates.noneWithPredicate\/npublic inline fun
CharSequence.none(predicate: (Char) -> Boolean): Boolean {
 for (element in this)
 if (predicate(element))
 return false
 return true
}

```

\* Performs the given [action] on each character and returns the char sequence itself afterwards.

```

*\/n@SinceKotlin("1.1")\/npublic inline fun <S : CharSequence> S.onEach(action: (Char) -> Unit): S {
 return apply {
 for (element in this)
 action(element)
 }
}

```

\* Performs the given [action] on each character, providing sequential index with the character, and returns the char sequence itself afterwards.

```

*\/n@SinceKotlin("1.4")\/npublic inline fun <S : CharSequence> S.onEachIndexed(action: (index: Int, Char) -> Unit): S {
 return apply {
 forEachIndexed(action)
 }
}

```

\* Accumulates value starting with the first character and applying [operation] from left to right to current accumulator value and each character.

```

*\/n@SinceKotlin("1.1")\/npublic inline fun <A, B> B.reduce(operation: (acc: A, B) -> A): A {
 if (isEmpty())
 throw UnsupportedOperationException("Empty char sequence can't be reduced.")
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(accumulator, this[index])
 }
 return accumulator
}

```

\* Accumulates value starting with the first character and applying [operation] from left to right to current accumulator value and each character with its index in the original char sequence.

```

*\/n@SinceKotlin("1.1")\/npublic inline fun <A, B> B.reduceIndexed(operation: (index: Int, acc: A, B) -> A): A {
 if (isEmpty())
 throw UnsupportedOperationException("Empty char sequence can't be reduced.")
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(index, accumulator, this[index])
 }
 return accumulator
}

```

\* Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way, please use [reduceOrNull] instead. It returns `null` when its receiver is empty.

```

*\/n@SinceKotlin("1.1")\/npublic inline fun <A, B> B.reduceOrNull(operation: (acc: A, B) -> A): A? {
 if (isEmpty())
 return null
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(accumulator, this[index])
 }
 return accumulator
}

```

\* Accumulates value starting with the first character and applying [operation] from left to right to current accumulator value and each character with its index in the original char sequence.

```

*\/n@SinceKotlin("1.1")\/npublic inline fun <A, B> B.reduceIndexedOrNull(operation: (index: Int, acc: A, B) -> A): A? {
 if (isEmpty())
 return null
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(index, accumulator, this[index])
 }
 return accumulator
}

```

\* Throws an exception if this char sequence is empty. If the char sequence can be empty in an expected way, please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.

```

*\/n@SinceKotlin("1.1")\/npublic inline fun <A, B> B.reduceIndexedWithOrNull(operation: (index: Int, acc: A, B) -> A): A? {
 if (isEmpty())
 return null
 var accumulator = this[0]
 for (index in 1..lastIndex) {
 accumulator = operation(index, accumulator, this[index])
 }
 return accumulator
}

```

\* Accumulates value starting with the first character and applying [operation] from left to right to current accumulator value and each character with its index in the original char sequence.

```

(index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n } \n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first character and applying [operation] from left to
right\n * to current accumulator value and each character with its index in the original char sequence.\n * \n *
Returns `null` if the char sequence is empty.\n * \n * @param [operation] function that takes the index of a
character, current accumulator value and the character itself,\n
* and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun
CharSequence.reduceIndexedOrNull(operation: (index: Int, acc: Char, Char) -> Char): Char? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index,
accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first
character and applying [operation] from left to right\n * to current accumulator value and each character.\n * \n *
Returns `null` if the char sequence is empty.\n * \n * @param [operation] function that takes current accumulator
value and a character,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n */\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharSequence.reduceOrNull(operation:
(acc: Char, Char) -> Char): Char? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index
in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last character and applying [operation] from right to left\n * to each character
and current accumulator value.\n * \n * Throws an exception if this char sequence is empty. If the char sequence can
be empty in an expected way,\n * please use [reduceRightOrNull] instead. It returns `null` when its receiver is
empty.\n * \n * @param [operation] function that takes a character and current accumulator value,\n * and calculates
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRight\n */\npublic
inline fun CharSequence.reduceRight(operation: (Char, acc: Char) -> Char): Char {\n var index = lastIndex\n if
(index < 0) throw UnsupportedOperationException("Empty
char sequence can't be reduced.")\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
last character and applying [operation] from right to left\n * to each character with its index in the original char
sequence and current accumulator value.\n * \n * Throws an exception if this char sequence is empty. If the char
sequence can be empty in an expected way,\n * please use [reduceRightIndexedOrNull] instead. It returns `null`
when its receiver is empty.\n * \n * @param [operation] function that takes the index of a character, the character
itself and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n */\npublic inline fun
CharSequence.reduceRightIndexed(operation: (index: Int, Char, acc: Char) -> Char): Char {\n var index
= lastIndex\n if (index < 0) throw UnsupportedOperationException("Empty char sequence can't be reduced.")\n var
accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last
character and applying [operation] from right to left\n * to each character with its index in the original char
sequence and current accumulator value.\n * \n * Returns `null` if the char sequence is empty.\n * \n * @param [operation]
function that takes the index of a character, the character itself and current accumulator value,\n * and calculates
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n */\n@SinceKotlin("1.4")\npublic inline fun CharSequence.reduceRightIndexedOrNull(operation: (index: Int, Char,
acc: Char) -> Char): Char? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator =
get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last
character and applying [operation] from right to left\n * to each character and current accumulator value.\n * \n *
Returns `null` if the char sequence is empty.\n * \n * @param [operation] function that takes a character and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample

```

```

samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun
CharSequence.reduceRightOrNull(operation: (Char, acc: Char) -> Char): Char? {\n var index = lastIndex\n if
(index < 0) return null\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator =
operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from left to right\n *
to each character and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed
to [operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n *
\n * @param [operation] function that takes current accumulator value and a character, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <R> CharSequence.runningFold(initial: R, operation: (acc: R, Char) ->
R): List<R> {\n if (isEmpty()) return listOf(initial)\n val result = ArrayList<R>(length + 1).apply { add(initial)
}\n var accumulator = initial\n for (element in this) {\n accumulator = operation(accumulator, element)\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns
a list containing successive accumulation values generated by applying [operation] from left to right\n * to each
character, its index in the original char sequence and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of a character, current
accumulator value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\npublic inline fun <R>
CharSequence.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n if
(isEmpty()) return listOf(initial)\n val result = ArrayList<R>(length + 1).apply { add(initial) }\n var accumulator
= initial\n for (index in indices) {\n accumulator = operation(index, accumulator,
this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each character and current
accumulator value that starts with the first character of this char sequence.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n
* @param [operation] function that takes current accumulator value and a character, and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\npublic inline fun CharSequence.runningReduce(operation: (acc: Char, Char) -> Char):
List<Char> {\n if (isEmpty()) return emptyList()\n var accumulator = this[0]\n val result =
ArrayList<Char>(length).apply { add(accumulator) }\n for (index in 1 until length) {\n accumulator =
operation(accumulator,
this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive
accumulation values generated by applying [operation] from left to right\n * to each character, its index in the
original char sequence and current accumulator value that starts with the first character of this char sequence.\n * \n
* Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the
previous value in resulting list.\n * \n * @param [operation] function that takes the index of a character, current
accumulator value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\npublic inline fun
CharSequence.runningReduceIndexed(operation: (index: Int, acc: Char, Char) -> Char): List<Char> {\n if
(isEmpty()) return emptyList()\n var accumulator = this[0]\n val result =
ArrayList<Char>(length).apply { add(accumulator) }\n for (index in 1 until length) {\n accumulator =
operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return result\n}\n\n/**\n *
Returns a list containing successive accumulation values generated by applying [operation] from left to right\n * to
each character and current accumulator value that starts with [initial] value.\n * \n * Note that `acc` value passed to
[operation] function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n
* @param [operation] function that takes current accumulator value and a character, and calculates the next

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accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R>
CharSequence.scan(initial: R, operation: (acc: R, Char) -> R): List<R> {\n return runningFold(initial,
operation)\n}\n\n/**\n
* Returns a list containing successive accumulation values generated by applying [operation] from left to right\n *
to each character, its index in the original char sequence and current accumulator value that starts with [initial]
value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation] function that takes the index of a character,
current accumulator value\n * and the character itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic inline fun <R>
CharSequence.scanIndexed(initial: R, operation: (index: Int, acc: R, Char) -> R): List<R> {\n return
runningFoldIndexed(initial, operation)\n}\n\n/**\n
* Returns the sum of all values produced by [selector] function
applied to each character in the char sequence.\n
*\n@Deprecated("Use sumOf instead.")
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
CharSequence.sumBy(selector: (Char) -> Int): Int {\n var sum: Int = 0\n for (element in this) {\n sum +=
selector(element)\n }\n return sum\n}\n\n/**\n
* Returns the sum of all values produced by [selector] function
applied to each character in the char sequence.\n
*\n@Deprecated("Use sumOf instead.")
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince = "1.5")\npublic inline fun
CharSequence.sumByDouble(selector: (Char) -> Double): Double {\n var sum: Double = 0.0\n for (element in
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n
* Returns the sum of all values produced by
[selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfDouble")\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.sumOf(selector: (Char) -> Double): Double {\n var sum: Double = 0.toDouble()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n
* Returns the sum of all values
produced by [selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfInt")\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.sumOf(selector: (Char) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this) {\n sum
+= selector(element)\n }\n return sum\n}\n\n/**\n
* Returns the sum of all values produced,
by [selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfLong")\n@kotlin.internal.InlineOnly\npublic
inline fun CharSequence.sumOf(selector: (Char) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element
in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n
* Returns the sum of all values produced
by [selector] function applied to each character in the char sequence.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfUInt")\n@WasExperimental(ExperimentalUnsignedType
s::class)\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.sumOf(selector: (Char) -> UInt): UInt {\n
var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return
sum\n}\n\n/**\n
* Returns the sum of all values produced by [selector] function applied to each character in the char
sequence.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@kotlin.jvm.JvmName("sumOfULong")\n@WasExperimental(ExperimentalUnsignedTy
pes::class)\n@kotlin.internal.InlineOnly\npublic

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inline fun CharSequence.sumOf(selector: (Char) -> ULong): ULong {
 var sum: ULong = 0
 for (element in this) sum += selector(element)
 return sum
}

// Splits this char sequence into a list of strings each not exceeding the given [size].
// The last string in the resulting list may have fewer characters than the given [size].
// @param size the number of elements to take in each string, must be positive and can be greater than the number of elements in this char sequence.
// @sample samples.text.Strings.chunked
// @SinceKotlin("1.2")
public fun CharSequence.chunked(size: Int): List<String> {
 return windowed(size, size, partialWindows = true)
}

// Splits this char sequence into several char sequences each not exceeding the given [size] and applies the given [transform] function to an each.
// @return list of results of the [transform] applied to an each char sequence.
// Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.
// You should not store it or allow it to escape in some way, unless you made a snapshot of it.
// The last char sequence may have fewer characters than the given [size].
// @param size the number of elements to take in each char sequence, must be positive and can be greater than the number of elements in this char sequence.
// @sample samples.text.Strings.chunkedTransform
// @SinceKotlin("1.2")
public fun <R> CharSequence.chunked(size: Int, transform: (CharSequence) -> R): List<R> {
 return windowed(size, size, partialWindows = true, transform = transform)
}

// Splits this char sequence into a sequence of strings each not exceeding the given [size].
// The last string in the resulting sequence may have fewer characters than the given [size].
// @param size the number of elements to take in each string, must be positive and can be greater than the number of elements in this char sequence.
// @sample samples.collections.Collections.Transformations.chunked
// @SinceKotlin("1.2")
public fun CharSequence.chunkedSequence(size: Int): Sequence<String> {
 return chunkedSequence(size) { it.toString() }
}

// Splits this char sequence into several char sequences each not exceeding the given [size] and applies the given [transform] function to an each.
// @return sequence of results of the [transform] applied to an each char sequence.
// Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.
// You should not store it or allow it to escape in some way, unless you made a snapshot of it.
// The last char sequence may have fewer characters than the given [size].
// @param size the number of elements to take in each char sequence, must be positive and can be greater than the number of elements in this char sequence.
// @sample samples.text.Strings.chunkedTransformToSequence
// @SinceKotlin("1.2")
public fun <R> CharSequence.chunkedSequence(size: Int, transform: (CharSequence) -> R): Sequence<R> {
 return windowedSequence(size, size, partialWindows = true, transform = transform)
}

// Splits the original char sequence into pair of char sequences, where *first* char sequence contains characters for which [predicate] yielded `true`, while *second* char sequence contains characters for which [predicate] yielded `false`.
// @sample samples.text.Strings.partition
// public inline fun CharSequence.partition(predicate: (Char) -> Boolean): Pair<CharSequence, CharSequence> {
 val first = StringBuilder()
 val second = StringBuilder()
 for (element in this) {
 if (predicate(element)) first.append(element)
 else second.append(element)
 }
 return Pair(first, second)
}

// Splits the original string into pair of strings, where *first* string contains characters for which [predicate] yielded `true`, while *second* string contains characters for which [predicate] yielded `false`.
// @sample samples.text.Strings.partition
// public inline fun String.partition(predicate: (Char) -> Boolean): Pair<String, String> {
 val first = StringBuilder()
 val second = StringBuilder()
 for (element in this) {
 if (predicate(element)) first.append(element)
 else second.append(element)
 }
 return Pair(first.toString(), second.toString())
}

// Returns a list of snapshots of the window of the given [size] sliding along this char sequence with the given [step], where each snapshot is a string.
// Several last strings may have fewer characters than the given [size].
// Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.
// @param size the number of elements to take in each window
// @param step the number of elements to move the window forward

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by on an each step, by default 1\n \* @param partialWindows controls whether or not to keep partial windows in the end if any,\n \* by default `false` which means partial windows won't be preserved\n \* \n \* @sample samples.collections.Sequences.Transformations.takeWindows\n \* ^\n@SinceKotlin("1.2")\npublic fun CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false): List<String> {\n return windowed(size, step, partialWindows) { it.toString() }\n}\n\n/\*\*\n \* Returns a list of results of applying the given [transform] function to\n \* an each char sequence representing a view over the window of the given [size]\n \* sliding

along this char sequence with the given [step].\n \* \n \* Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n \* You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n \* Several last char sequences may have fewer characters than the given [size].\n \* \n \* Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n \* @param size the number of elements to take in each window\n \* @param step the number of elements to move the window forward by on an each step, by default 1\n \* @param partialWindows controls whether or not to keep partial windows in the end if any,\n \* by default `false` which means partial windows won't be preserved\n \* \n \* @sample samples.collections.Sequences.Transformations.averageWindows\n \* ^\n@SinceKotlin("1.2")\npublic fun <R> CharSequence.windowed(size: Int, step: Int = 1, partialWindows: Boolean = false, transform:

(CharSequence) -> R): List<R> {\n checkWindowSizeStep(size, step)\n val thisSize = this.length\n val resultCapacity = thisSize / step + if (thisSize % step == 0) 0 else 1\n val result = ArrayList<R>(resultCapacity)\n var index = 0\n while (index in 0 until thisSize) {\n val end = index + size\n val coercedEnd = if (end < 0 || end > thisSize) { if (partialWindows) thisSize else break } else end\n result.add(transform(subSequence(index, coercedEnd)))\n index += step\n }\n return result\n}\n\n/\*\*\n \* Returns a sequence of snapshots of the window of the given [size]\n \* sliding along this char sequence with the given [step], where each\n \* snapshot is a string.\n \* \n \* Several last strings may have fewer characters than the given [size].\n \* \n \* Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n \* @param size the number of elements to take in each window\n \* @param step

the number of elements to move the window forward by on an each step, by default 1\n \* @param partialWindows controls whether or not to keep partial windows in the end if any,\n \* by default `false` which means partial windows won't be preserved\n \* \n \* @sample samples.collections.Sequences.Transformations.takeWindows\n \* ^\n@SinceKotlin("1.2")\npublic fun CharSequence.windowedSequence(size: Int, step: Int = 1, partialWindows: Boolean = false): Sequence<String> {\n return windowedSequence(size, step, partialWindows) { it.toString() }\n}\n\n/\*\*\n \* Returns a sequence of results of applying the given [transform] function to\n \* an each char sequence representing a view over the window of the given [size]\n \* sliding along this char sequence with the given [step].\n \* \n \* Note that the char sequence passed to the [transform] function is ephemeral and is valid only inside that function.\n \* You should not store it or allow it to escape in some way, unless you made a snapshot of it.\n \* \n \* Several last char sequences may have fewer characters than the given [size].\n \* \n \* Both [size] and [step] must be positive and can be greater than the number of elements in this char sequence.\n \* @param size the number of elements to take in each window\n \* @param step the number of elements to move the window forward by on an each step, by default 1\n \* @param partialWindows controls whether or not to keep partial windows in the end if any,\n \* by default `false` which means partial windows won't be preserved\n \* \n \* @sample

samples.collections.Sequences.Transformations.averageWindows\n \* ^\n@SinceKotlin("1.2")\npublic fun <R> CharSequence.windowedSequence(size: Int, step: Int = 1, partialWindows: Boolean = false, transform: (CharSequence) -> R): Sequence<R> {\n checkWindowSizeStep(size, step)\n val windows = (if (partialWindows) indices else 0 until length - size + 1) step step\n return windows.asSequence().map { index ->\n val end = index + size\n val coercedEnd = if (end < 0 || end > length) length else end\n transform(subSequence(index, coercedEnd))\n }\n}\n\n/\*\*\n \* Returns a list of pairs built from the characters of `this` and the [other] char sequences with the same index\n \* The returned list has length of the shortest char sequence.\n \* \n \* @sample samples.text.Strings.zip\n

```

*^public infix fun CharSequence.zip(other: CharSequence): List<Pair<Char, Char>> {
 return zip(other) { c1, c2 -> c1 to c2 }
}
**
* Returns a list of values built from the characters of `this` and the [other] char sequences with the same index
* using the provided [transform] function applied to each pair of characters.
The returned list has length of the shortest char sequence.
* @sample
samples.text.Strings.zipWithTransform
*^public inline fun <V> CharSequence.zip(other: CharSequence, transform: (a: Char, b: Char) -> V): List<V> {
 val length = minOf(this.length, other.length)
 val list = ArrayList<V>(length)
 for (i in 0 until length) {
 list.add(transform(this[i], other[i]))
 }
 return list
}
**
* Returns a list of pairs of each two adjacent characters in this char sequence.
* The returned list is empty if this char sequence contains less than two characters.
* @sample
samples.collections.Collections.Transformations.zipWithNext
*^@SinceKotlin("1.2")
public fun CharSequence.zipWithNext(): List<Pair<Char, Char>> {
 return zipWithNext { a, b -> a to b }
}
**
* Returns a list containing the results of applying the given [transform] function to an each pair of two adjacent characters in this char sequence.
* The returned list is empty if this char sequence contains less than two characters.
* @sample
samples.collections.Collections.Transformations.zipWithNextToFindDeltas
*^@SinceKotlin("1.2")
public inline fun <R> CharSequence.zipWithNext(transform: (a: Char, b: Char) -> R): List<R> {
 val size = length - 1
 if (size < 1) return emptyList()
 val result = ArrayList<R>(size)
 for (index in 0 until size) {
 result.add(transform(this[index], this[index + 1]))
 }
 return result
}
**
* Creates an [Iterable] instance that wraps the original char sequence returning its characters when being iterated.
*^public fun CharSequence.asIterable(): Iterable<Char> {
 if (this is String && isEmpty()) return emptyList()
 return Iterable { this.iterator() }
}
**
* Creates a [Sequence] instance that wraps the original char sequence returning its characters when being iterated.
*^public fun CharSequence.asSequence(): Sequence<Char> {
 if (this is String && isEmpty()) return emptySequence()
 return Sequence { this.iterator() }
}
**
Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
*^@file:kotlin.jvm.JvmMultifileClass@file:kotlin.jvm.JvmName("StringsKt")
package kotlin.text
import kotlin.contracts.contract
import kotlin.jvm.JvmName
**
* Returns a copy of this string converted to upper case using the rules of the default locale.
*^@Deprecated("Use uppercase() instead.", ReplaceWith("uppercase()"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public expect fun String.toUpperCase(): String
**
* Returns a copy of this string converted to upper case using Unicode mapping rules of the invariant locale.
* This function supports one-to-many and many-to-one character mapping,
* thus the length of the returned string can be different from the length of the original string.
* @sample
samples.text.Strings.uppercase
*^@SinceKotlin("1.5")
@WasExperimental(ExperimentalStdlibApi::class)
public expect fun String.uppercase(): String
**
* Returns a copy of this string converted to lower case using the rules of the default locale.
*^@Deprecated("Use lowercase() instead.", ReplaceWith("lowercase()"))
@DeprecatedSinceKotlin(warningSince = "1.5")
public expect fun String.toLowerCase(): String
**
* Returns a copy of this string converted to lower case using Unicode mapping rules of the invariant locale.
* This function supports one-to-many and many-to-one character mapping,
* thus the length of the returned string can be different from the length of the original string.
* @sample
samples.text.Strings.lowercase
*^@SinceKotlin("1.5")
@WasExperimental(ExperimentalStdlibApi::class)
public expect fun String.lowercase(): String
**
* Returns a copy of this string having its first letter titlecased using the rules of the default locale,
* or the original string if it's empty or already starts with a title case letter.
* The title case of a character is usually the same as its upper case with several exceptions.
* The particular list of characters with the special title case form depends on the underlying platform.
* @sample
samples.text.Strings.capitalize
*^@Deprecated("Use replaceFirstChar instead.", ReplaceWith("replaceFirstChar { if (it.isLowerCase())

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it.titlecase() else it.toString() }"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic expect fun
String.capitalize(): String\n\n/**\n * Returns a copy of this string having its first letter lowercased using the rules of
the default locale,\n * or the original string if it's empty or already starts with a lower case letter.\n *\n * @sample
samples.text.Strings.decapitalize\n *\n@Deprecated(\"Use replaceFirstChar instead.\",
ReplaceWith(\"replaceFirstChar { it.lowercase() }\"))\n@DeprecatedSinceKotlin(warningSince = \"1.5\")\npublic
expect fun String.decapitalize(): String\n\n/**\n * Returns a sub sequence of this char sequence having leading and
trailing characters matching the [predicate] removed.\n *\npublic inline fun CharSequence.trim(predicate: (Char)
-> Boolean): CharSequence {\n var startIndex = 0\n var endIndex = length - 1\n var startFound = false\n\n while (startIndex <= endIndex) {\n val index = if (!startFound) startIndex else endIndex\n val match =
predicate(this[index])\n\n if (!startFound) {\n if (!match)\n startFound = true\n else\n startIndex += 1\n } else {\n if (!match)\n break\n else\n endIndex -= 1\n }\n }\n\n return subSequence(startIndex, endIndex + 1)\n}\n\n/**\n * Returns a string having leading and
trailing characters matching the [predicate] removed.\n *\npublic inline fun String.trim(predicate: (Char) ->
Boolean): String =\n (this as CharSequence).trim(predicate).toString()\n\n/**\n * Returns a sub sequence of this
char sequence having leading characters matching the [predicate] removed.\n *\npublic inline fun
CharSequence.trimStart(predicate: (Char)
-> Boolean): CharSequence {\n for (index in this.indices)\n if (!predicate(this[index]))\n return
subSequence(index, length)\n}\n\n/**\n * Returns a string having leading characters matching the
[predicate] removed.\n *\npublic inline fun String.trimStart(predicate: (Char) -> Boolean): String =\n (this as
CharSequence).trimStart(predicate).toString()\n\n/**\n * Returns a sub sequence of this char sequence having
trailing characters matching the [predicate] removed.\n *\npublic inline fun CharSequence.trimEnd(predicate:
(Char) -> Boolean): CharSequence {\n for (index in this.indices.reversed())\n if (!predicate(this[index]))\n return
subSequence(0, index + 1)\n}\n\n/**\n * Returns a string having trailing characters
matching the [predicate] removed.\n *\npublic inline fun String.trimEnd(predicate: (Char) -> Boolean): String =\n (this as
CharSequence).trimEnd(predicate).toString()\n\n/**\n * Returns
a sub sequence of this char sequence having leading and trailing characters from the [chars] array removed.\n
*\npublic fun CharSequence.trim(vararg chars: Char): CharSequence = trim { it in chars }\n\n/**\n * Returns a
string having leading and trailing characters from the [chars] array removed.\n *\npublic fun String.trim(vararg
chars: Char): String = trim { it in chars }\n\n/**\n * Returns a sub sequence of this char sequence having leading
characters from the [chars] array removed.\n *\npublic fun CharSequence.trimStart(vararg chars: Char):
CharSequence = trimStart { it in chars }\n\n/**\n * Returns a string having leading characters from the [chars] array
removed.\n *\npublic fun String.trimStart(vararg chars: Char): String = trimStart { it in chars }\n\n/**\n * Returns a
sub sequence of this char sequence having trailing characters from the [chars] array removed.\n *\npublic fun
CharSequence.trimEnd(vararg chars: Char): CharSequence = trimEnd { it in chars }\n\n/**\n * Returns
a string having trailing characters from the [chars] array removed.\n *\npublic fun String.trimEnd(vararg chars:
Char): String = trimEnd { it in chars }\n\n/**\n * Returns a sub sequence of this char sequence having leading and
trailing whitespace removed.\n *\npublic fun CharSequence.trim(): CharSequence =
trim(Char::isWhitespace)\n\n/**\n * Returns a string having leading and trailing whitespace removed.\n
*\n@kotlin.internal.InlineOnly\npublic inline fun String.trim(): String = (this as
CharSequence).trim().toString()\n\n/**\n * Returns a sub sequence of this char sequence having leading whitespace
removed.\n *\npublic fun CharSequence.trimStart(): CharSequence = trimStart(Char::isWhitespace)\n\n/**\n *
Returns a string having leading whitespace removed.\n *\n@kotlin.internal.InlineOnly\npublic inline fun
String.trimStart(): String = (this as CharSequence).trimStart().toString()\n\n/**\n * Returns a sub sequence of this
char sequence having trailing whitespace removed.\n *\npublic
fun CharSequence.trimEnd(): CharSequence = trimEnd(Char::isWhitespace)\n\n/**\n * Returns a string having
trailing whitespace removed.\n *\n@kotlin.internal.InlineOnly\npublic inline fun String.trimEnd(): String = (this as
CharSequence).trimEnd().toString()\n\n/**\n * Returns a char sequence with content of this char sequence padded at
the beginning\n * to the specified [length] with the specified character or space.\n *\n * @param length the desired

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string length.\n * @param padChar the character to pad string with, if it has length less than the [length] specified.
Space is used by default.\n * @return Returns a char sequence of length at least [length] consisting of `this` char
sequence prepended with [padChar] as many times\n * as are necessary to reach that length.\n * @sample
samples.text.Strings.padStart\n */\npublic fun CharSequence.padStart(length: Int, padChar: Char = ' '):
CharSequence {\n if (length < 0)\n throw IllegalArgumentException("\Desired length
$length is less than zero.")\n if (length <= this.length)\n return this.subSequence(0, this.length)\n\n val sb =
StringBuilder(length)\n for (i in 1..(length - this.length))\n sb.append(padChar)\n sb.append(this)\n return
sb\n}\n\n/**\n * Pads the string to the specified [length] at the beginning with the specified character or space.\n *\n * @param length the desired string length.\n * @param padChar the character to pad string with, if it has length less
than the [length] specified. Space is used by default.\n * @return Returns a string of length at least [length]
consisting of `this` string prepended with [padChar] as many times\n * as are necessary to reach that length.\n *
@sample samples.text.Strings.padStart\n */\npublic fun String.padStart(length: Int, padChar: Char = ' '): String =\n
(this as CharSequence).padStart(length, padChar).toString()\n\n/**\n * Returns a char sequence with content of this
char sequence padded at the end\n * to the specified
[length] with the specified character or space.\n *\n * @param length the desired string length.\n * @param
padChar the character to pad string with, if it has length less than the [length] specified. Space is used by default.\n *
@return Returns a char sequence of length at least [length] consisting of `this` char sequence appended with
[padChar] as many times\n * as are necessary to reach that length.\n * @sample samples.text.Strings.padEnd\n */\n
public fun CharSequence.padEnd(length: Int, padChar: Char = ' '): CharSequence {\n if (length < 0)\n
throw IllegalArgumentException("\Desired length $length is less than zero.")\n if (length <= this.length)\n
return this.subSequence(0, this.length)\n\n val sb = StringBuilder(length)\n sb.append(this)\n for (i in
1..(length - this.length))\n sb.append(padChar)\n return sb\n}\n\n/**\n * Pads the string to the specified
[length] at the end with the specified character or space.\n *\n * @param length
the desired string length.\n * @param padChar the character to pad string with, if it has length less than the [length]
specified. Space is used by default.\n * @return Returns a string of length at least [length] consisting of `this` string
appended with [padChar] as many times\n * as are necessary to reach that length.\n * @sample
samples.text.Strings.padEnd\n */\npublic fun String.padEnd(length: Int, padChar: Char = ' '): String =\n (this as
CharSequence).padEnd(length, padChar).toString()\n\n/**\n * Returns `true` if this nullable char sequence is either
`null` or empty.\n *\n * @sample samples.text.Strings.stringIsNullOrEmpty\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence?.isNullOrEmpty(): Boolean {\n contract {\n
returns(false) implies (this@isNullOrEmpty != null)\n }\n\n return this == null || this.length == 0\n}\n\n/**\n *
Returns `true` if this char sequence is empty (contains no characters).\n *\n * @sample
samples.text.Strings.stringIsEmpty\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isEmpty(): Boolean = length == 0\n\n/**\n *
Returns `true` if this char sequence is not empty.\n *\n * @sample samples.text.Strings.stringIsNotEmpty\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isNotEmpty(): Boolean = length > 0\n\n//
implemented differently in JVM and JS\n//public fun String.isBlank(): Boolean = length() == 0 || all {
it.isWhitespace() }\n\n/**\n * Returns `true` if this char sequence is not empty and contains some characters
except of whitespace characters.\n *\n * @sample samples.text.Strings.stringIsNotBlank\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.isNotBlank(): Boolean = !isBlank()\n\n/**\n *
Returns `true` if this nullable char sequence is either `null` or empty or consists solely of whitespace characters.\n *\n *
@sample samples.text.Strings.stringIsNullOrBlank\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence?.isNullOrBlank(): Boolean
{\n contract {\n returns(false) implies (this@isNullOrBlank != null)\n }\n\n return this == null ||
this.isBlank()\n}\n\n/**\n * Iterator for characters of the given char sequence.\n */\npublic operator fun
CharSequence.iterator(): CharIterator = object : CharIterator() {\n private var index = 0\n public override fun
nextChar(): Char = get(index++)\n\n public override fun hasNext(): Boolean = index < length\n}\n\n/** Returns
the string if it is not `null`, or the empty string otherwise. */\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

String?.orEmpty(): String = this ?: ""\n\n/**\n * Returns this char sequence if it's not empty\n * or the result of
calling [defaultValue] function if the char sequence is empty.\n * \n * @sample samples.text.Strings.stringIfEmpty\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifEmpty(defaultValue: () ->
R): R where C : CharSequence, C : R =\n if (isEmpty()) defaultValue() else
 this\n\n/**\n * Returns this char sequence if it is not empty and doesn't consist solely of whitespace characters,\n *
or the result of calling [defaultValue] function otherwise.\n * \n * @sample samples.text.Strings.stringIfBlank\n
*\n@SinceKotlin("1.3")\n@kotlin.internal.InlineOnly\npublic inline fun <C, R> C.ifBlank(defaultValue: () -> R):
R where C : CharSequence, C : R =\n if (isBlank()) defaultValue() else this\n\n/**\n * Returns the range of valid
character indices for this char sequence.\n * \npublic val CharSequence.indices: IntRange\n get() = 0..length -
1\n\n/**\n * Returns the index of the last character in the char sequence or -1 if it is empty.\n * \npublic val
CharSequence.lastIndex: Int\n get() = this.length - 1\n\n/**\n * Returns `true` if this CharSequence has Unicode
surrogate pair at the specified [index].\n * \npublic fun CharSequence.hasSurrogatePairAt(index: Int): Boolean {\n
return index in 0..length - 2\n && this[index].isHighSurrogate()\n && this[index + 1].isLowSurrogate()\n}\n\n/**\n * Returns a substring specified by the given [range] of
indices.\n * \npublic fun String.substring(range: IntRange): String = substring(range.start, range.endInclusive +
1)\n\n/**\n * Returns a subsequence of this char sequence specified by the given [range] of indices.\n * \npublic fun
CharSequence.subSequence(range: IntRange): CharSequence = subSequence(range.start, range.endInclusive +
1)\n\n/**\n * Returns a subsequence of this char sequence.\n * \n * This extension is chosen only for invocation with
old-named parameters.\n * Replace parameter names with the same as those of [CharSequence.subSequence].\n
*\n@kotlin.internal.InlineOnly\n@Suppress("EXTENSION_SHADOWED_BY_MEMBER") // false
warning\n@Deprecated("Use parameters named startIndex and endIndex.", ReplaceWith("subSequence(startIndex
= start, endIndex = end)"))\npublic inline fun String.subSequence(start: Int, end: Int): CharSequence =
subSequence(start, end)\n\n/**\n
 * Returns a substring of chars from a range of this char sequence starting at the [startIndex] and ending right before
the [endIndex].\n * \n * @param startIndex the start index (inclusive).\n * @param endIndex the end index
(exclusive). If not specified, the length of the char sequence is used.\n * \n@kotlin.internal.InlineOnly\npublic inline
fun CharSequence.substring(startIndex: Int, endIndex: Int = length): String = subSequence(startIndex,
endIndex).toString()\n\n/**\n * Returns a substring of chars at indices from the specified [range] of this char
sequence.\n * \npublic fun CharSequence.substring(range: IntRange): String = subSequence(range.start,
range.endInclusive + 1).toString()\n\n/**\n * Returns a substring before the first occurrence of [delimiter].\n * If the
string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n
*\npublic fun String.substringBefore(delimiter: Char, missingDelimiterValue: String = this): String
{\n val index = indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(0,
index)\n}\n\n/**\n * Returns a substring before the first occurrence of [delimiter].\n * If the string does not contain
the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n * \npublic fun
String.substringBefore(delimiter: String, missingDelimiterValue: String = this): String {\n val index =
indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(0, index)\n}\n\n/**\n * Returns
a substring after the first occurrence of [delimiter].\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n * \npublic fun String.substringAfter(delimiter:
Char, missingDelimiterValue: String = this): String {\n val index = indexOf(delimiter)\n return if (index == -1)
missingDelimiterValue else substring(index + 1, length)\n}\n\n/**\n * Returns a substring after
the first occurrence of [delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue]
which defaults to the original string.\n * \npublic fun String.substringAfter(delimiter: String,
missingDelimiterValue: String = this): String {\n val index = indexOf(delimiter)\n return if (index == -1)
missingDelimiterValue else substring(index + delimiter.length, length)\n}\n\n/**\n * Returns a substring before the
last occurrence of [delimiter].\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which
defaults to the original string.\n * \npublic fun String.substringBeforeLast(delimiter: Char, missingDelimiterValue:
String = this): String {\n val index = lastIndexOf(delimiter)\n return if (index == -1) missingDelimiterValue else

```

substring(0, index)\n\n/\*\*\n \* Returns a substring before the last occurrence of [delimiter].\n \* If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n \*/\npublic fun String.substringBeforeLast(delimiter: String, missingDelimiterValue: String = this): String {\n val index = lastIndexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(0, index)\n}\n\n/\*\*\n \* Returns a substring after the last occurrence of [delimiter].\n \* If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n \*/\npublic fun String.substringAfterLast(delimiter: Char, missingDelimiterValue: String = this): String {\n val index = lastIndexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(index + 1, length)\n}\n\n/\*\*\n \* Returns a substring after the last occurrence of [delimiter].\n \* If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n \*/\npublic fun String.substringAfterLast(delimiter: String, missingDelimiterValue: String = this): String {\n val index = lastIndexOf(delimiter)\n return if (index == -1) missingDelimiterValue else substring(index + delimiter.length, length)\n}\n\n/\*\*\n \* Returns a char sequence with content of this char sequence where its part at the given range\n \* is replaced with the [replacement] char sequence.\n \* @param startIndex the index of the first character to be replaced.\n \* @param endIndex the index of the first character after the replacement to keep in the string.\n \*/\npublic fun CharSequence.replaceRange(startIndex: Int, endIndex: Int, replacement: CharSequence): CharSequence {\n if (endIndex < startIndex)\n throw IndexOutOfBoundsException("\u201cEnd index (\$endIndex) is less than start index (\$startIndex).\u201c")\n val sb = StringBuilder()\n sb.appendRange(this, 0, startIndex)\n sb.append(replacement)\n sb.appendRange(this, endIndex, length)\n return sb\n}\n\n/\*\*\n \* Replaces the part of the string at the given range with the [replacement] char sequence.\n \* @param startIndex the index of the first character to be replaced.\n \* @param endIndex the index of the first character after the replacement to keep in the string.\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun String.replaceRange(startIndex: Int, endIndex: Int, replacement: CharSequence): String =\n (this as CharSequence).replaceRange(startIndex, endIndex, replacement).toString()\n\n/\*\*\n \* Returns a char sequence with content of this char sequence where its part at the given [range]\n \* is replaced with the [replacement] char sequence.\n \* The end index of the [range] is included in the part to be replaced.\n \*/\npublic fun CharSequence.replaceRange(range: IntRange, replacement: CharSequence): CharSequence =\n replaceRange(range.start, range.endInclusive + 1, replacement)\n\n/\*\*\n \* Replace the part of string at the given [range] with the [replacement] string.\n \* The end index of the [range] is included in the part to be replaced.\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun String.replaceRange(range: IntRange, replacement: CharSequence): String =\n (this as CharSequence).replaceRange(range, replacement).toString()\n\n/\*\*\n \* Returns a char sequence with content of this char sequence where its part at the given range is removed.\n \* @param startIndex the index of the first character to be removed.\n \* @param endIndex the index of the first character after the removed part to keep in the string.\n \* [endIndex] is not included in the removed part.\n \*/\npublic fun CharSequence.removeRange(startIndex: Int, endIndex: Int): CharSequence {\n if (endIndex < startIndex)\n throw IndexOutOfBoundsException("\u201cEnd index (\$endIndex) is less than start index (\$startIndex).\u201c")\n if (endIndex == startIndex)\n return this.subSequence(0, length)\n val sb = StringBuilder(length - (endIndex - startIndex))\n sb.appendRange(this, 0, startIndex)\n sb.appendRange(this, endIndex, length)\n return sb\n}\n\n/\*\*\n \* Removes the part of a string at a given range.\n \* @param startIndex the index of the first character to be removed.\n \* @param endIndex the index of the first character after the removed part to keep in the string.\n \* [endIndex] is not included in the removed part.\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun String.removeRange(startIndex: Int, endIndex: Int): String =\n (this as CharSequence).removeRange(startIndex, endIndex).toString()\n\n/\*\*\n \* Returns a char sequence with content of this char sequence where its part at the given [range] is removed.\n \* The end index of the [range] is included in the removed part.\n \*/\npublic fun CharSequence.removeRange(range: IntRange): CharSequence =\n removeRange(range.start, range.endInclusive + 1)\n\n/\*\*\n \* Removes the part of a string at the given [range].\n \* The end index of the [range] is included in the removed part.\n \*/\n

```

*

@kotlin.internal.InlineOnly

public inline fun String.removeRange(range: IntRange): String =

(CharSequence).removeRange(range).toString()

* If this char sequence starts with the given [prefix], returns a new char sequence

with the prefix removed. Otherwise, returns a new char sequence with the same characters.

public fun

CharSequence.removePrefix(prefix: CharSequence): CharSequence {

 if (startsWith(prefix))

 return

 subSequence(prefix.length, length)

 }

 return subSequence(0, length)

}

* If this string starts with the given [prefix], returns a copy of this string

with the prefix removed. Otherwise, returns this string.

public

fun String.removePrefix(prefix: CharSequence): String {

 if (startsWith(prefix))

 return

 substring(prefix.length)

 }

 return this

}

* If this char sequence ends with the given [suffix], returns

a new char sequence with the suffix removed. Otherwise, returns a new char sequence with the same

characters.

public fun CharSequence.removeSuffix(suffix: CharSequence):

CharSequence {

 if (endsWith(suffix))

 return subSequence(0, length - suffix.length)

 }

 return

 subSequence(0, length)

}

* If this string ends with the given [suffix], returns a copy of this string

with the suffix removed. Otherwise, returns this string.

public fun String.removeSuffix(suffix: CharSequence):

String {

 if (endsWith(suffix))

 return substring(0, length - suffix.length)

 }

 return this

}

* When this char sequence starts with the given [prefix] and ends with the given [suffix],

returns a new char sequence having both the given [prefix] and [suffix] removed.

* Otherwise returns a new char sequence with the same characters.

public fun CharSequence.removeSurrounding(prefix: CharSequence, suffix: CharSequence):

CharSequence {

 if ((length >= prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix))

 return subSequence(prefix.length, length - suffix.length)

 }

 return subSequence(0, length)

}

* Removes from a string both the given [prefix] and [suffix] if and

only if it starts with the [prefix] and ends with the [suffix].

* Otherwise returns this string unchanged.

public fun String.removeSurrounding(prefix: CharSequence, suffix: CharSequence): String {

 if ((length >=

 prefix.length + suffix.length) && startsWith(prefix) && endsWith(suffix))

 return substring(prefix.length,

 length - suffix.length)

 }

 return this

}

* When this char sequence starts with and ends with the

given [delimiter], returns a new char sequence having this [delimiter] removed both from the start and end.

* Otherwise returns a new char sequence with the same characters.

public fun

CharSequence.removeSurrounding(delimiter: CharSequence): CharSequence = removeSurrounding(delimiter,

delimiter)

* Removes the given [delimiter] string from both the start and the end of this string

if and

only

if it starts with and ends with the [delimiter].

* Otherwise returns this string unchanged.

public fun

String.removeSurrounding(delimiter: CharSequence): String = removeSurrounding(delimiter, delimiter)

* Replace part of string before the first occurrence of given delimiter with the [replacement] string.

* If the string

does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.

public

fun String.replaceBefore(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String {

 val index = indexOf(delimiter)

 return if (index == -1) missingDelimiterValue else replaceRange(0, index,

 replacement)

}

* Replace part of string before the first occurrence of given delimiter with the

[replacement] string.

* If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults

to the original string.

public fun String.replaceBefore(delimiter: String, replacement:

String, missingDelimiterValue: String = this): String {

 val index = indexOf(delimiter)

 return if (index == -1)

 missingDelimiterValue else replaceRange(0, index, replacement)

}

* Replace part of string after the first

occurrence of given delimiter with the [replacement] string.

* If the string does not contain the delimiter, returns

[missingDelimiterValue] which defaults to the original string.

public fun String.replaceAfter(delimiter: Char,

replacement: String, missingDelimiterValue: String = this): String {

 val index = indexOf(delimiter)

 return if

 (index == -1) missingDelimiterValue else replaceRange(index + 1, length, replacement)

}

* Replace part

of string after the first occurrence of given delimiter with the [replacement] string.

* If the string does not contain

the delimiter, returns [missingDelimiterValue] which defaults to the original string.

public fun

String.replaceAfter(delimiter: String, replacement: String, missingDelimiterValue:

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String = this): String { \n val index = indexOf(delimiter)\n return if (index == -1) missingDelimiterValue else
replaceRange(index + delimiter.length, length, replacement)\n}\n\n/**\n * Replace part of string after the last
occurrence of given delimiter with the [replacement] string.\n * If the string does not contain the delimiter, returns
[missingDelimiterValue] which defaults to the original string.\n */\npublic fun String.replaceAfterLast(delimiter:
String, replacement: String, missingDelimiterValue: String = this): String { \n val index = lastIndexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(index + delimiter.length, length,
replacement)\n}\n\n/**\n * Replace part of string after the last occurrence of given delimiter with the [replacement]
string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original
string.\n */\npublic fun String.replaceAfterLast(delimiter: Char,
replacement: String, missingDelimiterValue: String = this): String { \n val index = lastIndexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(index + 1, length, replacement)\n}\n\n/**\n *
Replace part of string before the last occurrence of given delimiter with the [replacement] string.\n * If the string
does not contain the delimiter, returns [missingDelimiterValue] which defaults to the original string.\n */\npublic
fun String.replaceBeforeLast(delimiter: Char, replacement: String, missingDelimiterValue: String = this): String { \n
val index = lastIndexOf(delimiter)\n return if (index == -1) missingDelimiterValue else replaceRange(0, index,
replacement)\n}\n\n/**\n * Replace part of string before the last occurrence of given delimiter with the
[replacement] string.\n * If the string does not contain the delimiter, returns [missingDelimiterValue] which defaults
to the original string.\n */\npublic fun String.replaceBeforeLast(delimiter: String,
replacement: String, missingDelimiterValue: String = this): String { \n val index = lastIndexOf(delimiter)\n
return if (index == -1) missingDelimiterValue else replaceRange(0, index, replacement)\n}\n\n// public fun
String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean): String // JVM- and JS-specific\n// public fun
String.replace(oldValue: String, newValue: String, ignoreCase: Boolean): String // JVM- and JS-specific\n\n/**\n *
Returns a new string obtained by replacing each substring of this char sequence that matches the given regular
expression\n * with the given [replacement].\n * The [replacement] can consist of any combination of literal text
and $-substitutions. To treat the replacement string\n * literally escape it with the
[kotlin.text.Regex.Companion.escapeReplacement] method.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.replace(regex: Regex, replacement: String): String = regex.replace(this, replacement)\n\n/**\n *
Returns a
new string obtained by replacing each substring of this char sequence that matches the given regular expression\n *
with the result of the given function [transform] that takes [MatchResult] and returns a string to be used as a\n *
replacement for that match.\n */\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.replace(regex:
Regex, noinline transform: (MatchResult) -> CharSequence): String =\n regex.replace(this, transform)\n\n/**\n *
Replaces the first occurrence of the given regular expression [regex] in this char sequence with specified
[replacement] expression.\n * \n * @param replacement A replacement expression that can include substitutions. See
[Regex.replaceFirst] for details.\n */\n@kotlin.internal.InlineOnly\npublic inline fun
CharSequence.replaceFirst(regex: Regex, replacement: String): String = regex.replaceFirst(this,
replacement)\n\n/**\n * Returns a copy of this string having its first character replaced with the result of the
specified [transform],\n *
or the original string if it's empty.\n * \n * @param transform function that takes the first character and returns the
result of the transform applied to the character.\n * \n * @sample samples.text.Strings.replaceFirstChar\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@OptIn(kotlin.experimental.Exper
imentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@JvmName("replaceFirstCharWithC
har")\n@kotlin.internal.InlineOnly\npublic inline fun String.replaceFirstChar(transform: (Char) -> Char): String { \n
return if (isEmpty()) transform(this[0]) + substring(1) else this\n}\n\n/**\n * Returns a copy of this string
having its first character replaced with the result of the specified [transform],\n *
or the original string if it's empty.\n * \n * @param transform function that takes the first character and returns the
result of the transform applied to the
character.\n * \n * @sample samples.text.Strings.replaceFirstChar\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@OptIn(kotlin.experimental.Exper

```

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imentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@JvmName("replaceFirstCharWithC
harSequence")\n@kotlin.internal.InlineOnly\npublic
inline fun String.replaceFirstChar(transform: (Char) -> CharSequence): String {\n return if (isEmpty())
transform(this[0]).toString() + substring(1) else this\n}\n\n/**\n * Returns `true` if this char sequence matches the
given regular expression.\n * \n@kotlin.internal.InlineOnly\npublic inline infix fun CharSequence.matches(regex:
Regex): Boolean = regex.matches(this)\n\n/**\n * Implementation of [regionMatches] for CharSequences.\n *
\n * Invoked when it's already known that arguments are not Strings, so that no additional type checks are performed.\n
*\n * \ninternal fun CharSequence.regionMatchesImpl(thisOffset: Int, other: CharSequence, otherOffset: Int, length: Int,
ignoreCase: Boolean): Boolean {\n if ((otherOffset < 0) || (thisOffset < 0) ||
(thisOffset > this.length - length) || (otherOffset > other.length - length)) {\n return false\n }\n for (index
in 0 until length) {\n if (!this[thisOffset + index].equals(other[otherOffset + index], ignoreCase))\n return
false\n }\n return true\n}\n\n/**\n * Returns `true` if this char sequence starts with the specified character.\n
*\n * \npublic fun CharSequence.startsWith(char: Char, ignoreCase: Boolean = false): Boolean =\n this.length > 0 &&
this[0].equals(char, ignoreCase)\n\n/**\n * Returns `true` if this char sequence ends with the specified character.\n
*\n * \npublic fun CharSequence.endsWith(char: Char, ignoreCase: Boolean = false): Boolean =\n this.length > 0 &&
this[lastIndex].equals(char, ignoreCase)\n\n/**\n * Returns `true` if this char sequence starts with the specified
prefix.\n * \npublic fun CharSequence.startsWith(prefix: CharSequence, ignoreCase: Boolean = false): Boolean {\n if (!ignoreCase && this is String && prefix is
String)\n return this.startsWith(prefix)\n else\n return regionMatchesImpl(0, prefix, 0, prefix.length,
ignoreCase)\n}\n\n/**\n * Returns `true` if a substring of this char sequence starting at the specified offset
[startIndex] starts with the specified prefix.\n * \npublic fun CharSequence.startsWith(prefix: CharSequence,
startIndex: Int, ignoreCase: Boolean = false): Boolean {\n if (!ignoreCase && this is String && prefix is String)\n
 return this.startsWith(prefix, startIndex)\n else\n return regionMatchesImpl(startIndex, prefix, 0,
prefix.length, ignoreCase)\n}\n\n/**\n * Returns `true` if this char sequence ends with the specified suffix.\n
*\n * \npublic fun CharSequence.endsWith(suffix: CharSequence, ignoreCase: Boolean = false): Boolean {\n if
(!ignoreCase && this is String && suffix is String)\n return this.endsWith(suffix)\n else\n return
regionMatchesImpl(length - suffix.length, suffix, 0, suffix.length, ignoreCase)\n}\n\n/**\n * Returns the longest string `prefix` such that this char sequence and [other]
char sequence both start with this prefix,\n * taking care not to split surrogate pairs.\n * If this and [other] have no
common prefix, returns the empty string.\n * \n * @param ignoreCase `true` to ignore character case when matching a
character. By default `false`.\n * @sample samples.text.Strings.commonPrefixWith\n * \npublic fun
CharSequence.commonPrefixWith(other: CharSequence, ignoreCase: Boolean = false): String {\n val
shortestLength = minOf(this.length, other.length)\n var i = 0\n while (i < shortestLength &&
this[i].equals(other[i], ignoreCase = ignoreCase)) {\n i++\n }\n if (this.hasSurrogatePairAt(i - 1) ||
other.hasSurrogatePairAt(i - 1)) {\n i--\n }\n return subSequence(0, i).toString()\n}\n\n/**\n * Returns the
longest string `suffix` such that this char sequence and [other] char sequence both end with this suffix,\n * taking
care not to split surrogate pairs.\n * If this and [other] have no common suffix, returns the empty string.\n *
\n * @param ignoreCase `true` to ignore character case when matching a character. By default `false`.\n * @sample
samples.text.Strings.commonSuffixWith\n * \npublic fun CharSequence.commonSuffixWith(other: CharSequence,
ignoreCase: Boolean = false): String {\n val thisLength = this.length\n val otherLength = other.length\n val
shortestLength = minOf(thisLength, otherLength)\n var i = 0\n while (i < shortestLength && this[thisLength -
i - 1].equals(other[otherLength - i - 1], ignoreCase = ignoreCase)) {\n i++\n }\n if
(this.hasSurrogatePairAt(thisLength - i - 1) || other.hasSurrogatePairAt(otherLength - i - 1)) {\n i--\n }\n
return subSequence(thisLength - i, thisLength).toString()\n}\n\n/**\n * Finds the index of the
first occurrence of any of the specified [chars] in this char sequence,\n * starting from the specified
[startIndex] and optionally ignoring the case.\n * \n * @param ignoreCase `true` to ignore character case when
matching a character. By default `false`.\n * @return An index of the first occurrence of matched character from
[chars] or -1 if none of [chars] are found.\n * \n * \npublic fun CharSequence.indexOfAny(chars: CharArray,

```

```

startIndex: Int = 0, ignoreCase: Boolean = false): Int {
 val char = chars.single()
 return nativeIndexOf(char, startIndex)
}

for (index in
startIndex.coerceAtLeast(0)..lastIndex) {
 val charAtIndex = get(index)
 if (chars.any {
it.equals(charAtIndex, ignoreCase) })
 return index
 }
 return -1
}

/** Finds the index of the
last occurrence of any of the specified [chars] in this char sequence,
starting from the specified [startIndex] and
optionally ignoring the case.

@param startIndex The index of character to start
searching at. The search proceeds backward toward the beginning of the string.

@param ignoreCase `true` to
ignore character case when matching a character. By default `false`.

@return An index of the last occurrence of
matched character from [chars] or -1 if none of [chars] are found.

*/
public fun
CharSequence.lastIndexOfAny(chars: CharArray, startIndex: Int = lastIndex, ignoreCase: Boolean = false): Int {
 if (!ignoreCase && chars.size == 1 && this is String) {
 val char = chars.single()
 return
nativeLastIndexOf(char, startIndex)
 }

 for (index in startIndex.coerceAtMost(lastIndex) downTo 0) {
 val charAtIndex = get(index)
 if (chars.any { it.equals(charAtIndex, ignoreCase) })
 return index
 }

 return -1
}

private fun CharSequence.indexOf(other: CharSequence, startIndex: Int, endIndex: Int,
ignoreCase: Boolean, last: Boolean = false): Int {
 val indices = if (!last)
startIndex.coerceAtLeast(0)..endIndex.coerceAtMost(length)
 else
startIndex.coerceAtMost(lastIndex) downTo endIndex.coerceAtLeast(0)

 if (this is String &&
other is String) { // smart cast
 for (index in indices) {
 if (other.regionMatches(0, this, index,
other.length, ignoreCase))
 return index
 }
 } else {
 for (index in indices) {
 if
(other.regionMatchesImpl(0, this, index, other.length, ignoreCase))
 return index
 }
 }

 return
-1
}

private fun CharSequence.findAnyOf(strings: Collection<String>, startIndex: Int, ignoreCase: Boolean,
last: Boolean): Pair<Int, String>? {
 if (!ignoreCase && strings.size == 1) {
 val string = strings.single()
 val index = if (!last) indexOf(string, startIndex) else lastIndexOf(string, startIndex)
 return if (index < 0) null
else index to string
 }

 val indices = if (!last) startIndex.coerceAtLeast(0)..length
else startIndex.coerceAtMost(lastIndex) downTo 0

 if (this is String) {
 for (index in indices) {
 val matchingString = strings.firstOrNull { it.regionMatches(0, this, index, it.length, ignoreCase) }
 if
(matchingString != null)
 return index to matchingString
 }
 } else {
 for (index in indices) {
 val matchingString = strings.firstOrNull { it.regionMatchesImpl(0, this, index, it.length, ignoreCase) }
 if
(matchingString != null)
 return index to matchingString
 }
 }

 return
null
}

/** Finds the first occurrence of any of the specified [strings] in this char sequence,
starting from
the specified [startIndex] and optionally ignoring the case.

@param ignoreCase `true` to ignore character
case when matching a string. By default `false`.

@return A pair of an index of the first occurrence of matched
string from [strings] and the string
matched or `null` if none of [strings] are found.

To avoid ambiguous results when strings in [strings]
have characters in common, this method proceeds from
the beginning to the end of this string, and finds at each
position the first element in [strings] that matches this string at that position.

*/
public fun
CharSequence.findAnyOf(strings: Collection<String>, startIndex: Int = 0, ignoreCase: Boolean = false): Pair<Int,
String>? =
findAnyOf(strings, startIndex, ignoreCase, last = false)

/** Finds the last occurrence of any of
the specified [strings] in this char sequence,
starting from the specified [startIndex] and optionally ignoring the
case.

@param startIndex The index of character to start searching at. The search proceeds backward toward
the beginning of the string.

@param ignoreCase `true` to ignore character case when matching a string. By
default `false`.

@return A pair of an index of the last occurrence of matched string
from [strings] and the string matched or `null` if none of [strings] are found.

To avoid ambiguous results
when strings in [strings] have characters in common, this method proceeds from
the end toward the beginning of
this string, and finds at each position the first element in [strings] that matches this string at that position.

*/
public fun CharSequence.findLastAnyOf(strings: Collection<String>, startIndex: Int = lastIndex, ignoreCase:
Boolean = false): Pair<Int, String>? =
findAnyOf(strings, startIndex, ignoreCase, last = true)

/** Finds
the index of the first occurrence of any of the specified [strings] in this char sequence,
starting from the specified

```





```

*\n@Suppress("INAPPLICABLE_OPERATOR_MODIFIER")\npublic
operator fun CharSequence.contains(char: Char, ignoreCase: Boolean = false): Boolean =\n indexOf(char,
ignoreCase = ignoreCase) >= 0\n\n/**\n * Returns `true` if this char sequence contains at least one match of the
specified regular expression [regex].\n */\n@kotlin.internal.InlineOnly\npublic inline operator fun
CharSequence.contains(regex: Regex): Boolean = regex.containsMatchIn(this)\n\n//
rangesDelimitedBy\n\nprivate class DelimitedRangesSequence(\n private val input: CharSequence,\n private
val startIndex: Int,\n private val limit: Int,\n private val getNextMatch: CharSequence.(currentIndex: Int) ->
Pair<Int, Int>?(): Sequence<IntRange> {\n\n override fun iterator(): Iterator<IntRange> = object :
Iterator<IntRange> {\n var nextState: Int = -1 // -1 for unknown, 0 for done, 1 for continue\n var
currentStartIndex: Int = startIndex.coerceIn(0, input.length)\n var nextSearchIndex: Int = currentStartIndex\n
var nextItem:
IntRange? = null\n var counter: Int = 0\n private fun calcNext() {\n if (nextSearchIndex < 0) {\n
nextState = 0\n nextItem = null\n } else {\n if (limit > 0 && ++counter >= limit ||
nextSearchIndex > input.length) {\n nextItem = currentStartIndex..input.lastIndex\n
nextSearchIndex = -1\n } else {\n val match = input.getNextMatch(nextSearchIndex)\n
if (match == null) {\n nextItem = currentStartIndex..input.lastIndex\n
nextSearchIndex = -1\n } else {\n val (index, length) = match\n nextItem =
currentStartIndex until index\n currentStartIndex = index + length\n nextSearchIndex =
currentStartIndex + if (length == 0) 1 else 0\n }\n }\n nextState = 1\n }\n }\n
override fun next(): IntRange {\n if (nextState == -
1)\n calcNext()\n if (nextState == 0)\n throw NoSuchElementException()\n val
result = nextItem as IntRange\n // Clean next to avoid keeping reference on yielded instance\n
nextItem = null\n nextState = -1\n return result\n }\n override fun hasNext(): Boolean {\n
if (nextState == -1)\n calcNext()\n return nextState == 1\n }\n }\n}\n\n/**\n * Returns a
sequence of index ranges of substrings in this char sequence around occurrences of the specified [delimiters].\n */\n
@param delimiters One or more characters to be used as delimiters.\n * @param startIndex The index to start
searching delimiters from.\n * No range having its start value less than [startIndex] is returned.\n * [startIndex] is
coerced
to be non-negative and not greater than length of this string.\n * @param ignoreCase `true` to ignore character case
when matching a delimiter. By default `false`.\n * @param limit The maximum number of substrings to return. Zero
by default means no limit is set.\n */\nprivate fun CharSequence.rangesDelimitedBy(delimiters: CharArray,
startIndex: Int = 0, ignoreCase: Boolean = false, limit: Int = 0): Sequence<IntRange> {\n
requireNonNegativeLimit(limit)\n return DelimitedRangesSequence(this, startIndex, limit, { currentIndex ->\n
indexOfAny(delimiters, currentIndex, ignoreCase = ignoreCase).let { if (it < 0) null else it to 1 }\n
})\n}\n\n/**\n * Returns a sequence of index ranges of substrings in this char sequence around occurrences of the
specified [delimiters].\n */\n * @param delimiters One or more strings to be used as delimiters.\n * @param
startIndex The index to start searching delimiters from.\n * No range having its start value less than [startIndex] is
returned.\n * [startIndex] is coerced to be non-negative and not greater than length of this string.\n * @param
ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n * @param limit The
maximum number of substrings to return. Zero by default means no limit is set.\n */\n * To avoid ambiguous results
when strings in [delimiters] have characters in common, this method proceeds from\n * the beginning to the end of
this string, and finds at each position the first element in [delimiters]\n * that matches this string at that position.\n
*/\nprivate fun CharSequence.rangesDelimitedBy(delimiters: Array<out String>, startIndex: Int = 0, ignoreCase:
Boolean = false, limit: Int = 0): Sequence<IntRange> {\n requireNonNegativeLimit(limit)\n val delimitersList =
delimiters.asList()\n return DelimitedRangesSequence(this, startIndex, limit, { currentIndex ->
findAnyOf(delimitersList, currentIndex, ignoreCase = ignoreCase, last = false)?.let { it.first
to it.second.length } })\n}\n\ninternal fun requireNonNegativeLimit(limit: Int) =\n require(limit >= 0) { "\nLimit
must be non-negative, but was $limit" }\n\n// split\n\n/**\n * Splits this char sequence to a sequence of strings

```

around occurrences of the specified [delimiters].\n \* @param delimiters One or more strings to be used as delimiters.\n \* @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n \* @param limit The maximum number of substrings to return. Zero by default means no limit is set.\n \* To avoid ambiguous results when strings in [delimiters] have characters in common, this method proceeds from the beginning to the end of this string, and finds at each position the first element in [delimiters] that matches this string at that position.\n \*/\npublic fun CharSequence.splitToSequence(vararg delimiters: String, ignoreCase: Boolean = false, limit: Int = 0): Sequence<String> =\n rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).map { substring(it) }\n\n/\*\*\n \* Splits this char sequence to a list of strings around occurrences of the specified [delimiters].\n \* @param delimiters One or more strings to be used as delimiters.\n \* @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n \* @param limit The maximum number of substrings to return. Zero by default means no limit is set.\n \* To avoid ambiguous results when strings in [delimiters] have characters in common, this method proceeds from the beginning to the end of this string, and matches at each position the first element in [delimiters] that is equal to a delimiter in this instance at that position.\n \*/\npublic fun CharSequence.split(vararg delimiters: String, ignoreCase: Boolean = false, limit: Int = 0): List<String> {\n if (delimiters.size == 1) {\n val delimiter = delimiters[0]\n if (!delimiter.isEmpty()) {\n return split(delimiter, ignoreCase, limit)\n }\n }\n return rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).asIterable().map { substring(it) }\n}\n\n/\*\*\n \* Splits this char sequence to a sequence of strings around occurrences of the specified [delimiters].\n \* @param delimiters One or more characters to be used as delimiters.\n \* @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n \* @param limit The maximum number of substrings to return.\n \*/\npublic fun CharSequence.splitToSequence(vararg delimiters: Char, ignoreCase: Boolean = false, limit: Int = 0): Sequence<String> =\n rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).map { substring(it) }\n\n/\*\*\n \* Splits this char sequence to a list of strings around occurrences of the specified [delimiters].\n \* @param delimiters One or more characters to be used as delimiters.\n \* @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n \* @param limit The maximum number of substrings to return.\n \*/\npublic fun CharSequence.split(vararg delimiters: Char, ignoreCase: Boolean = false, limit: Int = 0): List<String> {\n if (delimiters.size == 1) {\n return split(delimiters[0].toString(), ignoreCase, limit)\n }\n return rangesDelimitedBy(delimiters, ignoreCase = ignoreCase, limit = limit).asIterable().map { substring(it) }\n}\n\n/\*\*\n \* Splits this char sequence to a list of strings around occurrences of the specified [delimiter].\n \* This is specialized version of split which receives single non-empty delimiter and offers better performance.\n \* @param delimiter String used as delimiter.\n \* @param ignoreCase `true` to ignore character case when matching a delimiter. By default `false`.\n \* @param limit The maximum number of substrings to return.\n \*/\nprivate fun CharSequence.split(delimiter: String, ignoreCase: Boolean, limit: Int): List<String> {\n requireNonNegativeLimit(limit)\n\n var currentOffset = 0\n var nextIndex = indexOf(delimiter, currentOffset, ignoreCase)\n if (nextIndex == -1 || limit == 1) {\n return listOf(this.toString())\n }\n val isLimited = limit > 0\n val result = ArrayList<String>(if (isLimited) limit.coerceAtMost(10) else 10)\n do {\n result.add(substring(currentOffset, nextIndex))\n currentOffset = nextIndex + delimiter.length\n // Do not search for next occurrence if we're reaching limit\n if (isLimited && result.size == limit - 1) break\n nextIndex = indexOf(delimiter, currentOffset, ignoreCase)\n } while (nextIndex != -1)\n result.add(substring(currentOffset, length))\n return result\n}\n\n/\*\*\n \* Splits this char sequence to a list of strings around matches of the given regular expression.\n \* @param limit Non-negative value specifying the maximum number of substrings to return.\n \* Zero by default means no limit is set.\n \*/\n@kotlin.internal.InlineOnly\npublic inline fun CharSequence.split(regex: Regex, limit: Int = 0): List<String> = regex.split(this, limit)\n\n/\*\*\n \* Splits this char sequence to a sequence of strings around matches of the given regular expression.\n \* @param limit Non-negative value specifying the maximum number of substrings to return.\n \* Zero by default means no limit is set.\n \* @sample samples.text.Strings.splitToSequence\n \*/\n

```

*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
c inline fun CharSequence.splitToSequence(regex: Regex, limit: Int = 0): Sequence<String> =
regex.splitToSequence(this, limit)\n\n/**\n * Splits this char sequence to a sequence of lines delimited by any of the
following character sequences: CRLF, LF or CR.\n * \n * The lines returned do not include terminating line
separators.\n *\npublic fun CharSequence.lineSequence(): Sequence<String> = splitToSequence("\\r\\n", "\\n",
"\\r")\n\n/**\n * Splits this char
sequence to a list of lines delimited by any of the following character sequences: CRLF, LF or CR.\n * \n * The
lines returned do not include terminating line separators.\n *\npublic fun CharSequence.lines(): List<String> =
lineSequence().toList()\n\n/**\n * Returns `true` if the contents of this char sequence are equal to the contents of the
specified [other],\n * i.e. both char sequences contain the same number of the same characters in the same order.\n
*\n * @sample samples.text.Strings.contentEquals\n *\n@SinceKotlin("1.5")\npublic expect infix fun
CharSequence?.contentEquals(other: CharSequence?): Boolean\n\n/**\n * Returns `true` if the contents of this char
sequence are equal to the contents of the specified [other], optionally ignoring case difference.\n * \n * @param
ignoreCase `true` to ignore character case when comparing contents.\n * \n * @sample
samples.text.Strings.contentEquals\n *\n@SinceKotlin("1.5")\npublic expect fun
CharSequence?.contentEquals(other: CharSequence?,
ignoreCase: Boolean): Boolean\n\ninternal fun CharSequence?.contentEqualsIgnoreCaseImpl(other:
CharSequence?): Boolean {\n if (this is String && other is String) {\n return this.equals(other, ignoreCase =
true)\n }\n if (this === other) return true\n if (this == null || other == null || this.length != other.length) return
false\n for (i in 0 until length) {\n if (!this[i].equals(other[i], ignoreCase = true)) {\n return false\n
 }\n }\n return true\n}\n\ninternal fun CharSequence?.contentEqualsImpl(other: CharSequence?): Boolean {\n
if (this is String && other is String) {\n return this == other\n }\n if (this === other) return true\n if (this
== null || other == null || this.length != other.length) return false\n for (i in 0 until length) {\n if (this[i] !=
other[i]) {\n return false\n }\n }\n return true\n}\n\n/**\n * Returns `true` if the content of this
string
is equal to the word `true`, `false` if it is equal to `false`,\n * and throws an exception otherwise.\n * \n * There is
also a lenient version of the function available on nullable String, [String?.toBoolean].\n * Note that this function is
case-sensitive.\n * \n * @sample samples.text.Strings.toBooleanStrict\n *\n@SinceKotlin("1.5")\npublic fun
String.toBooleanStrict(): Boolean = when (this) {\n `true` -> true\n `false` -> false\n else -> throw
IllegalArgumentException("The string doesn't represent a boolean value: $this")\n}\n\n/**\n * Returns `true` if the
content of this string is equal to the word `true`, `false` if it is equal to `false`,\n * and `null` otherwise.\n * \n *
There is also a lenient version of the function available on nullable String, [String?.toBoolean].\n * Note that this
function is case-sensitive.\n * \n * @sample samples.text.Strings.toBooleanStrictOrNull\n
*\n@SinceKotlin("1.5")\npublic fun String.toBooleanStrictOrNull(): Boolean?
= when (this) {\n `true` -> true\n `false` -> false\n else -> null\n}, /*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\n\n// Auto-generated file. DO NOT
EDIT!\n\npackage kotlin\n\nimport
kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic value class
UByteArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: ByteArray) :
Collection<UByte> {\n /** Creates a new array of the specified [size], with all elements initialized to zero. *\n
public constructor(size: Int) : this(ByteArray(size))\n /**\n * Returns the array element at the given [index].
This method can be called using the index operator.\n * \n * If the [index] is out of bounds of this array, throws
an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n *\n public operator fun get(index: Int): UByte = storage[index].toUByte()\n /**\n *
Sets the element at the given [index] to the given [value]. This method can be called using the index operator.\n
 *\n * If the [index] is out of bounds of this array, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n
 * where the behavior is unspecified.\n *\n public operator fun set(index: Int, value: UByte) {\n

```

```

storage[index] = value.toByte()\n } \n\n /** Returns the number of elements in the array. *\n public override
val size: Int get() = storage.size\n\n /** Creates an iterator over the elements of the array. *\n public override
operator fun iterator(): kotlin.collections.Iterator<UByte> = Iterator(storage)\n\n private class Iterator(private val
array: ByteArray) : kotlin.collections.Iterator<UByte> {\n private var index = 0\n override fun hasNext() =
index < array.size\n override fun
next() = if (index < array.size) array[index++].toUByte() else throw NoSuchElementException(index.toString())\n
}\n\n override fun contains(element: UByte): Boolean {\n // TODO: Eliminate this check after KT-30016 gets
fixed.\n // Currently JS BE does not generate special bridge method for this method.\n
@Suppress("USELESS_CAST")\n if ((element as Any?) !is UByte) return false\n\n return
storage.contains(element.toByte())\n }\n\n override fun containsAll(elements: Collection<UByte>): Boolean {\n
return (elements as Collection<*>).all { it is UByte && storage.contains(it.toByte()) }\n }\n\n override fun
isEmpty(): Boolean = this.storage.size == 0\n\n/**\n * Creates a new array of the specified [size], where each
element is calculated by calling the specified\n * [init] function.\n * The function [init] is called for each array
element sequentially starting from the first one.\n * It should return the value for an array
element given its index.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray(size: Int, init: (Int) -> UByte): UByteArray {\n return UByteArray(ByteArray(size) { index ->
init(index).toByte()
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ubyteArrayOf(vararg elements: UByte): UByteArray = elements\n", "\n * Copyright 2010-2022 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n *\n\n// Auto-generated file. DO NOT EDIT!\n\npackage
kotlin\n\nimport kotlin.jvm.*\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@JvmInline\npublic
value class UIntArray\n@PublishedApi\ninternal constructor(@PublishedApi internal val storage: IntArray) :
Collection<UInt> {\n\n /** Creates a new array of the specified [size], with all elements initialized
to zero. *\n public constructor(size: Int) : this(IntArray(size))\n\n /**\n * Returns the array element at the
given [index]. This method can be called using the index operator.\n * If the [index] is out of bounds of this
array, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
*\n public operator fun get(index: Int): UInt = storage[index].toInt()\n\n /**\n * Sets the element at the
given [index] to the given [value]. This method can be called using the index operator.\n * If the [index] is
out of bounds of this array, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior
is unspecified.\n *\n public operator fun set(index: Int, value: UInt) {\n storage[index] = value.toInt()\n
}\n\n /** Returns the number of elements in the array. *\n public override val size: Int get() = storage.size\n
\n\n /** Creates an iterator over
the elements of the array. *\n public override operator fun iterator(): kotlin.collections.Iterator<UInt> =
Iterator(storage)\n\n private class Iterator(private val array: IntArray) : kotlin.collections.Iterator<UInt> {\n
private var index = 0\n override fun hasNext() = index < array.size\n override fun next() = if (index <
array.size) array[index++].toInt() else throw NoSuchElementException(index.toString())\n }\n\n override fun
contains(element: UInt): Boolean {\n // TODO: Eliminate this check after KT-30016 gets fixed.\n //
Currently JS BE does not generate special bridge method for this method.\n
@Suppress("USELESS_CAST")\n if ((element as Any?) !is UInt) return false\n\n return
storage.contains(element.toInt())\n }\n\n override fun containsAll(elements: Collection<UInt>): Boolean {\n
return (elements as Collection<*>).all { it is UInt && storage.contains(it.toInt()) }\n }\n\n override fun
isEmpty():
Boolean = this.storage.size == 0\n\n/**\n * Creates a new array of the specified [size], where each element is
calculated by calling the specified\n * [init] function.\n * The function [init] is called for each array element
sequentially starting from the first one.\n * It should return the value for an array element given its index.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

UIntArray(size: Int, init: (Int) -> UInt): UIntArray {
 return UIntArray(IntArray(size) { index ->
 init(index).toInt()
 })
}

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
uintArrayOf(vararg elements: UInt): UIntArray = elements

/**
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 * Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that
 * can be found in the license/LICENSE.txt file.
 */
// Auto-generated file. DO NOT EDIT!
package
kotlin
import kotlin.jvm.*
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@JvmInline
public
value class ULongArray
@PublishedApi
internal constructor(@PublishedApi internal val storage: LongArray) :
Collection<ULong> {
 /**
 * Creates a new array of the specified [size], with all elements initialized to zero.
 */
 public constructor(size: Int) : this(LongArray(size))
 /**
 * Returns the array element at the given [index].
 * This method can be called using the index operator.
 * If the [index] is out of bounds of this array, throws
 * an [IndexOutOfBoundsException] except in Kotlin/JS
 * where the behavior is unspecified.
 */
 public
 operator fun get(index: Int): ULong = storage[index].toULong()
 /**
 * Sets the element at the given
 * [index] to the given [value]. This method can be called using the index
 * operator.
 * If the [index] is out of
 * bounds of this array, throws an [IndexOutOfBoundsException] except
 * in Kotlin/JS
 * where the behavior is unspecified.
 */
 public operator fun set(index: Int, value: ULong)
 {
 storage[index] = value.toLong()
 }
 /**
 * Returns the number of elements in the array.
 */
 public
 override val size: Int get() = storage.size
 /**
 * Creates an iterator over the elements of the array.
 */
 public
 override operator fun iterator(): kotlin.collections.Iterator<ULong> = Iterator(storage)
 private class
 Iterator(private val array: LongArray) : kotlin.collections.Iterator<ULong> {
 private var index = 0
 override fun hasNext() = index < array.size
 override fun next() = if (index < array.size)
 array[index++].toULong() else throw NoSuchElementException(index.toString())
 }
 override fun
 contains(element: ULong): Boolean {
 // TODO: Eliminate this check after KT-30016 gets fixed.
 //
 // Currently JS BE does not generate special bridge method for this method.
 }
 @Suppress("USELESS_CAST")
 if ((element as Any?) !is ULong) return false
 return storage.contains(element.toLong())
}
 override fun containsAll(elements: Collection<ULong>): Boolean {
 return (elements as Collection<*>).all { it
 is ULong && storage.contains(it.toLong()) }
 }
 override fun isEmpty(): Boolean = this.storage.size ==
0
}

/**
 * Creates a new array of the specified [size], where each element is calculated by calling the
 * specified
 * [init] function.
 * The function [init] is called for each array element sequentially starting from the
 * first one.
 * It should return the value for an array element given its index.
 */
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ULongArray(size: Int, init: (Int) -> ULong): ULongArray {
 return ULongArray(LongArray(size) { index ->
 init(index).toLong()
 })
}

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public
inline fun
ulongArrayOf(vararg elements: ULong): ULongArray = elements

/**
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 * Use of this source code is governed by the
 * Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
// Auto-generated file. DO NOT
EDIT!
package
kotlin
import
kotlin.jvm.*
@SinceKotlin("1.3")@ExperimentalUnsignedTypes@JvmInline
public value class
UShortArray
@PublishedApi
internal constructor(@PublishedApi internal val storage: ShortArray) :
Collection<UShort> {
 /**
 * Creates a new array of the specified [size], with all elements initialized to zero.
 */
 public constructor(size: Int) : this(ShortArray(size))
 /**
 * Returns the array element at the given [index].
 * This method can be called using the index operator.
 * If the [index] is out of bounds of this array, throws
 * an [IndexOutOfBoundsException] except in Kotlin/JS
 * where
 * the behavior is unspecified.
 */
 public operator fun get(index: Int): UShort = storage[index].toUShort()
 /**
 * Sets the element at the given [index] to the given [value]. This method can be called using the index
 * operator.
 * If the [index] is out of bounds of this array, throws an [IndexOutOfBoundsException] except

```

```

in Kotlin/JS\n * where the behavior is unspecified.\n */\n public operator fun set(index: Int, value: UShort)
{\n storage[index] = value.toShort()\n }\n\n /** Returns the number of elements in the array. */\n public
override val size: Int get() = storage.size\n\n /** Creates an iterator over the elements of the array. */\n public
override operator fun iterator(): kotlin.collections.Iterator<UShort> = Iterator(storage)\n\n private class
Iterator(private val array: ShortArray) : kotlin.collections.Iterator<UShort> {\n private var index = 0\n
override fun hasNext() = index < array.size\n
 override fun next() = if (index < array.size) array[index++].toUShort() else throw
NoSuchElementException(index.toString())\n }\n\n override fun contains(element: UShort): Boolean {\n //
TODO: Eliminate this check after KT-30016 gets fixed.\n // Currently JS BE does not generate special bridge
method for this method.\n @Suppress("USELESS_CAST")\n if ((element as Any?) !is UShort) return
false\n\n return storage.contains(element.toShort())\n }\n\n override fun containsAll(elements:
Collection<UShort>): Boolean {\n return (elements as Collection<*>).all { it is UShort &&
storage.contains(it.toShort()) }\n }\n\n override fun isEmpty(): Boolean = this.storage.size == 0\n}\n\n/**\n *
Creates a new array of the specified [size], where each element is calculated by calling the specified\n * [init]
function.\n * \n * The function [init] is called for each array element sequentially starting from the first one.\n * It
should return
 the value for an array element given its index.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray(size: Int, init: (Int) -> UShort): UShortArray {\n return UShortArray(ShortArray(size) { index ->
init(index).toShort()
})\n}\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ushortArrayOf(vararg elements: UShort): UShortArray = elements\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UArraysKt")\n@file:kotlin.jvm.JvmPacka
geName("kotlin.collections.unsigned")\n\npackage kotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-
GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport
kotlin.random.*\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns 1st *element*
from the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.component1(): UInt {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from the array.\n * \n * If
the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun ULongArray.component1(): ULong {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from
the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior
 is unspecified.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline operator fun UByteArray.component1(): UByte {\n return get(0)\n}\n\n/**\n * Returns 1st *element* from
the array.\n * \n * If the size of this array is less than 1, throws an [IndexOutOfBoundsException] except in
Kotlin/JS\n * where the behavior is unspecified.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component1(): UShort {\n return get(0)\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n *
If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.component2(): UInt {\n return get(1)\n}\n}\n\n/**\n * Returns 2nd *element* from the array.\n * \n * If

```

the size of this array is

less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.  
\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
ULongArray.component2(): ULong { return get(1)}\n\n\*\* Returns 2nd \*element\* from the array.\n\*\n\*  
If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the  
behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
UByteArray.component2(): UByte { return get(1)}\n\n\*\* Returns 2nd \*element\* from the array.\n\*\n\*\n\*  
If the size of this array is less than 2, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the  
behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
UShortArray.component2(): UShort { return  
get(1)}\n\n\*\* Returns 3rd \*element\* from the array.\n\*\n\*\n\* If the size of this array is less than 3, throws an  
[IndexOutOfBoundsException] except in Kotlin/JS where the behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
UIntArray.component3(): UInt { return get(2)}\n\n\*\* Returns 3rd \*element\* from the array.\n\*\n\*\n\* If  
the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the  
behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
ULongArray.component3(): ULong { return get(2)}\n\n\*\* Returns 3rd \*element\* from the array.\n\*\n\*\n\*  
If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the  
behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic  
inline operator fun UByteArray.component3(): UByte { return get(2)}\n\n\*\* Returns 3rd \*element\* from  
the array.\n\*\n\*\n\* If the size of this array is less than 3, throws an [IndexOutOfBoundsException] except in  
Kotlin/JS where the behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
UShortArray.component3(): UShort { return get(2)}\n\n\*\* Returns 4th \*element\* from the array.\n\*\n\*\n\*  
If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the  
behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
UIntArray.component4(): UInt { return get(3)}\n\n\*\* Returns 4th \*element\* from the array.\n\*\n\*\n\* If the  
size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where  
the behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
ULongArray.component4(): ULong { return get(3)}\n\n\*\* Returns 4th \*element\* from the array.\n\*\n\*\n\*  
If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the  
behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
UByteArray.component4(): UByte { return get(3)}\n\n\*\* Returns 4th \*element\* from the array.\n\*\n\*\n\*  
If the size of this array is less than 4, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the  
behavior is unspecified.

\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline operator fun  
UShortArray.component4(): UShort { return get(3)}\n\n\*\* Returns 5th \*element\* from the array.\n\*\n\*\n\*  
If the size

of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS where the behavior is  
unspecified.  
\*SinceKotlin("1.3")ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic  
inline operator fun UIntArray.component5(): UInt { return get(4)}\n\n\*\* Returns 5th \*element\* from the

array.\n \* \n \* If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n \* where the behavior is unspecified.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.component5(): ULong {\n return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n *
If the size of this array is less than 5, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the
behavior is unspecified.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.component5(): UByte
{\n return get(4)\n}\n\n/**\n * Returns 5th *element* from the array.\n * \n * If the size of this array is less than
5, throws an [IndexOutOfBoundsException] except in Kotlin/JS\n * where the behavior is unspecified.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.component5(): UShort {\n return get(4)\n}\n\n/**\n * Returns an element at the given [index] or
throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAt\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UIntArray.elementAt(index: Int):
UInt\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun ULongArray.elementAt(index:
Int): ULong\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the
[index] is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UByteArray.elementAt(index: Int):
UByte\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index]
is out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic expect fun UShortArray.elementAt(index: Int):
UShort\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue] function if the
[index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UIntArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UInt): UInt {\n return if (index >= 0 && index
<= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result
of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.elementAtOrElse(index: Int, defaultValue: (Int) -> ULong): ULong {\n return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrElse(index:
Int, defaultValue: (Int) -> UByte): UByte {\n return if (index >= 0 && index <= lastIndex) get(index) else
defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the [defaultValue]
function if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrElse\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.elementAtOrElse(index: Int, defaultValue: (Int) -> UShort): UShort {\n return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or
`null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
```



```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.elementAtOrNull(index: Int): UInt? {\n
 return this.getOrNull(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.elementAtOrNull(index: Int): ULong? {\n return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.elementAtOrNull(index: Int): UByte? {\n return this.getOrNull(index)\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.elementAtOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.elementAtOrNull(index: Int): UShort? {\n return this.getOrNull(index)\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.find(predicate: (UInt) -> Boolean): UInt? {\n return firstOrNull(predicate)\n}\n\n/**\n * Returns the
first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.find(predicate: (ULong) -> Boolean): ULong? {\n return firstOrNull(predicate)\n}\n\n/**\n *
Returns the first element matching the given [predicate], or `null` if no such element was found.\n
*\n * \n * @sample samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.find(predicate: (UByte) -> Boolean): UByte? {\n return firstOrNull(predicate)\n}\n\n/**\n * Returns
the first element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.find(predicate: (UShort) -> Boolean): UShort? {\n return firstOrNull(predicate)\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.findLast(predicate: (UInt) -> Boolean): UInt? {\n return lastOrNull(predicate)\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.findLast(predicate: (ULong) -> Boolean): ULong? {\n return lastOrNull(predicate)\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.findLast(predicate: (UByte) -> Boolean): UByte? {\n return lastOrNull(predicate)\n}\n\n/**\n *
Returns the last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.find\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.findLast(predicate: (UShort) -> Boolean): UShort? {\n return
lastOrNull(predicate)\n}\n\n/**\n * Returns the first element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic

```

```

inline fun UIntArray.first(): UInt {\n return storage.first().toUInt()\n}\n\n/**\n * Returns the first element.\n * \n *\n * @throws NoSuchElementException if the array is empty.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.first(): ULong {\n return storage.first().toULong()\n}\n\n/**\n * Returns the first element.\n * \n *\n * @throws NoSuchElementException if the array is empty.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.first(): UByte {\n return storage.first().toUByte()\n}\n\n/**\n * Returns the first element.\n * \n *\n * @throws
NoSuchElementException if the array is empty.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.first(): UShort {\n return storage.first().toUShort()\n}\n\n/**\n * Returns the first element matching
the given [predicate].\n * \n * @throws [NoSuchElementException] if no such element is found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.first(predicate: (UInt) -> Boolean): UInt {\n for (element in this) if (predicate(element)) return
element\n throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * \n * @throws [NoSuchElementException] if no such
element is found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.first(predicate: (ULong) -> Boolean): ULong {\n for (element in this) if
(predicate(element)) return element\n throw NoSuchElementException("Array contains no element matching the
predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * \n * @throws
[NoSuchElementException] if no such element is found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.first(predicate: (UByte) -> Boolean): UByte {\n for (element in this) if (predicate(element)) return
element\n throw NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the first element matching the given [predicate].\n * \n * @throws [NoSuchElementException] if no such
element is found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.first(predicate: (UShort) -> Boolean): UShort {\n for (element in this) if (predicate(element)) return
element\n throw NoSuchElementException("Array contains no
element matching the predicate.")\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.firstOrNull(): UInt? {\n return
if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.firstOrNull(): ULong? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.firstOrNull(): UByte? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element, or `null` if the array is empty.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.firstOrNull(): UShort? {\n
return if (isEmpty()) null else this[0]\n}\n\n/**\n * Returns the first element matching the given [predicate], or
`null` if element was not found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.firstOrNull(predicate: (UInt) -> Boolean): UInt? {\n for (element in this) if (predicate(element)) return
element\n return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element
was not found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.firstOrNull(predicate: (ULong) -> Boolean): ULong? {\n for (element in this) if
(predicate(element)) return element\n return null\n}\n\n/**\n * Returns the first element matching the given
[predicate], or `null` if element was not found.\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun

```

```

ByteArray.firstOrNull(predicate: (UByte) -> Boolean): UByte? {\n for (element in this) if (predicate(element))
return element\n return null\n}\n\n/**\n * Returns the first element matching the given [predicate], or `null` if element was not found.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.firstOrNull(predicate: (UShort) -> Boolean): UShort? {\n for (element in this) if (predicate(element))
return element\n return null\n}\n\n/**\n * Returns an element at the given [index] or the result of calling the
[defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.getOrNull(index: Int, defaultValue: (Int) -> UInt): UInt {\n return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.getOrNull(index: Int, defaultValue: (Int) -> ULong): ULong {\n return if (index >= 0 &&
index <= lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the
result of calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.getOrNull(index: Int, defaultValue: (Int) -> UByte): UByte {\n return if (index >= 0 && index <=
lastIndex) get(index) else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or the result of
calling the [defaultValue] function if the [index] is out of bounds of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.getOrNull(index: Int, defaultValue: (Int) -> UShort): UShort {\n return if (index >= 0 && index <=
lastIndex) get(index)
else defaultValue(index)\n}\n\n/**\n * Returns an element at the given [index] or `null` if the [index] is out of
bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.getOrNull(index: Int): UInt? {\n
return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at the given
[index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.getOrNull(index: Int):
ULong? {\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an element at
the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ByteArray.getOrNull(index:
Int): UByte? {\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns an
element at the given [index] or `null` if the [index] is out of bounds of this array.\n * \n * @sample
samples.collections.Collections.Elements.getOrNull\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.getOrNull(index: Int):
UShort? {\n return if (index >= 0 && index <= lastIndex) get(index) else null\n}\n\n/**\n * Returns first index of
[element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOf(element: UInt): Int {\n return storage.indexOf(element.toInt())\n}\n\n/**\n * Returns first
index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.indexOf(element: ULong): Int {\n return
storage.indexOf(element.toLong())\n}\n\n/**\n * Returns first index of [element], or -1 if the array does not contain
element.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun ByteArray.indexOf(element: UByte): Int {\n return storage.indexOf(element.toByte())\n}\n\n/**\n * Returns
first index of [element], or -1 if the array does not contain element.\n

```

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOf(element: UShort): Int {\n return storage.indexOf(element.toShort())\n}\n\n/**\n * Returns
index of the first element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOfFirst(predicate: (UInt) -> Boolean): Int {\n return storage.indexOfFirst { predicate(it.toUInt())
}\n}\n\n/**\n * Returns index of the first
element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.indexOfFirst(predicate: (ULong) -> Boolean): Int {\n return storage.indexOfFirst {
predicate(it.toULong()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOfFirst(predicate: (UByte) -> Boolean): Int {\n return storage.indexOfFirst {
predicate(it.toUByte()) }\n}\n\n/**\n * Returns index of the first element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOfFirst(predicate: (UShort) -> Boolean): Int {\n return storage.indexOfFirst
{ predicate(it.toUShort()) }\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if
the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.indexOfLast(predicate: (UInt) -> Boolean): Int {\n return storage.indexOfLast { predicate(it.toUInt())
}\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the array does not contain
such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.indexOfLast(predicate: (ULong) -> Boolean): Int {\n return storage.indexOfLast {
predicate(it.toULong()) }\n}\n\n/**\n * Returns index of the last element matching the given [predicate], or -1 if the
array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.indexOfLast(predicate:
(UByte) -> Boolean): Int {\n return storage.indexOfLast { predicate(it.toUByte()) }\n}\n\n/**\n * Returns index
of the last element matching the given [predicate], or -1 if the array does not contain such element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.indexOfLast(predicate: (UShort) -> Boolean): Int {\n return storage.indexOfLast {
predicate(it.toUShort()) }\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.last(): UInt {\n return storage.last().toUInt()\n}\n\n/**\n * Returns the last element.\n * \n * @throws
NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.last(): ULong {\n return storage.last().toULong()\n}\n\n/**\n * Returns the last element.\n
*\n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.last(): UByte {\n return storage.last().toUByte()\n}\n\n/**\n * Returns the last element.\n * \n *
@throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.last(): UShort {\n return storage.last().toUShort()\n}\n\n/**\n * Returns the last element matching
the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n * \n * @sample

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samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.last(predicate: (UInt) -> Boolean): UInt {\n for (index in this.indices.reversed()) {\n val element =
this[index]\n if (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains
no element matching the predicate.")\n}\n\n/**\n * Returns the last element matching the given [predicate].\n * \n *
@throws NoSuchElementException if no such element is found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.last(predicate: (ULong) -> Boolean): ULong {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n if (predicate(element)) return element\n }\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.last(predicate: (UByte) -> Boolean): UByte {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n if (predicate(element)) return element\n }\n throw
NoSuchElementException("Array contains no element matching the predicate.")\n}\n\n/**\n * Returns the last
element matching the given [predicate].\n * \n * @throws NoSuchElementException if no such element is found.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.last(predicate: (UShort) -> Boolean): UShort {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n
 if (predicate(element)) return element\n }\n throw NoSuchElementException("Array contains no element
matching the predicate.")\n}\n\n/**\n * Returns last index of [element], or -1 if the array does not contain
element.\n * \n * @SinceKotlin("1.3")\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline
fun UIntArray.lastIndexOf(element: UInt): Int {\n return storage.lastIndexOf(element.toInt())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastIndexOf(element: ULong): Int {\n return storage.lastIndexOf(element.toLong())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.lastIndexOf(element: UByte): Int {\n return storage.lastIndexOf(element.toByte())\n}\n\n/**\n *
Returns last index of [element], or -1 if the array does not contain element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.lastIndexOf(element: UShort): Int {\n return storage.lastIndexOf(element.toShort())\n}\n\n/**\n *
Returns the last element, or `null` if the array is empty.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.lastOrNull(): UInt? {\n return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last
element, or `null` if the array is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.lastOrNull(): ULong? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.lastOrNull(): UByte? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element, or `null` if the array is empty.\n
*\n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.lastOrNull(): UShort? {\n
return if (isEmpty()) null else this[size - 1]\n}\n\n/**\n * Returns the last element matching the given [predicate], or
`null` if no such element was found.\n * \n * @sample samples.collections.Collections.Elements.last\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.lastOrNull(predicate: (UInt) -> Boolean): UInt? {\n for (index in this.indices.reversed()) {\n val
element = this[index]\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the last
element
matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.lastOrNull(predicate: (ULong) -> Boolean): ULong? {\n for (index in this.indices.reversed()) {\n
val element = this[index]\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the
last element matching the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.lastOrNull(predicate: (UByte) -> Boolean): UByte? {\n for (index in this.indices.reversed()) {\n
val element = this[index]\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns the
last element matching
the given [predicate], or `null` if no such element was found.\n * \n * @sample
samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.lastOrNull(predicate: (UShort) -> Boolean): UShort? {\n for (index in this.indices.reversed()) {\n
val element = this[index]\n if (predicate(element)) return element\n }\n return null\n}\n\n/**\n * Returns a
random element from this array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.random(): UInt {\n return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n
* \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.random(): ULong {\n return random(Random)\n}\n\n/**\n * Returns a random element from this array.\n
* \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.random(): UByte {\n return random(Random)\n}\n\n/**\n * Returns a random element from this
array.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.random(): UShort {\n return random(Random)\n}\n\n/**\n * Returns a random element from this
array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.random(random: Random): UInt
{\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from
this array using the specified source of randomness.\n * \n * @throws NoSuchElementException if this array is
empty.\n * \n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.random(random:
Random): ULong {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.random(random: Random):
UByte {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness.\n * \n * @throws NoSuchElementException if this array is empty.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.random(random: Random):
UShort {\n if (isEmpty())\n throw NoSuchElementException("Array is empty.")\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UIntArray.randomOrNull(): UInt? {\n return
randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun ULongArray.randomOrNull(): ULong? {\n return
randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UByteArray.randomOrNull():
UByte? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array, or `null` if
this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UShortArray.randomOrNull(): UShort? {\n return
randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\nnp
ublic fun UIntArray.randomOrNull(random: Random): UInt? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\nnp
ublic fun ULongArray.randomOrNull(random:
Random): ULong? {\n if (isEmpty())\n return null\n return get(random.nextInt(size))\n}\n\n/**\n * Returns
a random element from this array using the specified source of randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\nnp
ublic fun UByteArray.randomOrNull(random: Random): UByte? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns a random element from this array using the specified source of
randomness, or `null` if this array is empty.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\nnp
ublic fun UShortArray.randomOrNull(random: Random): UShort? {\n if (isEmpty())\n return null\n return
get(random.nextInt(size))\n}\n\n/**\n * Returns the single element, or throws an exception if the array is empty or
has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.single(): UInt {\n return storage.single().toUInt()\n}\n\n/**\n * Returns the single element,
or throws an exception if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.single(): ULong {\n return storage.single().toULong()\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.single(): UByte {\n return storage.single().toUByte()\n}\n\n/**\n * Returns the single element, or
throws an exception if the array is empty or has more than one element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.single(): UShort {\n return
storage.single().toUShort()\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws
exception if there is no or more than one matching element.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.single(predicate: (UInt) -> Boolean): UInt {\n var single: UInt? = null\n var found = false\n for
(element in this) {\n if (predicate(element)) {\n if (found) throw IllegalArgumentException("Array
contains more than one matching element.")\n single = element\n found = true\n }\n }\n if
(!found) throw NoSuchElementException("Array contains no element matching the predicate.")\n}

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@Suppress("UNCHECKED_CAST")\n return single as UInt\n}\n\n/**\n * Returns the single element matching
the given [predicate], or throws exception if there is no or more than one matching element.\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.single(predicate: (ULong) -> Boolean): ULong {\n var single: ULong? = null\n var
found = false\n for (element in this) {\n if (predicate(element)) {\n if (found) throw
IllegalArgumentOutOfRangeException("Array contains more than one matching element.")\n single = element\n
found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no element matching
the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as ULong\n}\n\n/**\n * Returns the
single element matching the given [predicate], or throws exception if there is no or more than one matching
element.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UByteArray.single(predicate: (UByte) -> Boolean): UByte {\n var single: UByte? = null\n var found =
false\n for (element in this) {\n if (predicate(element)) {\n if (found) throw
IllegalArgumentOutOfRangeException("Array contains more than one matching element.")\n single =
element\n found = true\n }\n }\n if (!found) throw NoSuchElementException("Array contains no
element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as
UByte\n}\n\n/**\n * Returns the single element matching the given [predicate], or throws exception if there is no or
more than one matching element.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.single(predicate: (UShort) -> Boolean): UShort {\n var single: UShort? = null\n var found = false\n
for (element in this) {\n if (predicate(element)) {\n if (found) throw
IllegalArgumentOutOfRangeException("Array
contains more than one matching element.")\n single = element\n found = true\n }\n }\n if
(!found) throw NoSuchElementException("Array contains
no element matching the predicate.")\n @Suppress("UNCHECKED_CAST")\n return single as
UShort\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more than one element.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.singleOrNull(): UInt? {\n
return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more
than one element.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.singleOrNull(): ULong? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single
element, or `null` if the array is empty or has more than one element.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.singleOrNull(): UByte? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns single element, or `null` if the array is empty or has more
than one element.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.singleOrNull(): UShort? {\n return if (size == 1) this[0] else null\n}\n\n/**\n * Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UIntArray.singleOrNull(predicate: (UInt) -> Boolean): UInt? {\n var single: UInt? = null\n var found =
false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single =
element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun ULongArray.singleOrNull(predicate: (ULong) -> Boolean): ULong? {\n
 var single: ULong? = null\n var found = false\n for (element in this) {\n if (predicate(element)) {\n
 if (found) return null\n single = element\n found = true\n }\n }\n if (!found) return null\n
return single\n}\n\n/**\n * Returns the single element matching the given [predicate], or `null` if element was not
found or more than one element was found.\n */\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.singleOrNull(predicate: (UByte) -> Boolean): UByte? {\n var single: UByte? = null\n var found =
false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single =

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element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns the
single element matching the given [predicate], or `null` if element was not found or more than one element was
found.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun UShortArray.singleOrNull(predicate: (UShort) -> Boolean): UShort? {\n var single: UShort? = null\n var
found = false\n for (element in this) {\n if (predicate(element)) {\n if (found) return null\n single
= element\n found = true\n }\n }\n if (!found) return null\n return single\n}\n\n/**\n * Returns a list
containing all elements except first [n] elements.\n *\n * @throws IllegalArgumentException if [n] is negative.\n *\n *\n@sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.drop(n: Int): List<UInt> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.drop(n: Int): List<ULong> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.drop(n: Int): List<UByte> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except first [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.drop(n: Int): List<UShort>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return takeLast((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.dropLast(n: Int): List<UInt> {\n
require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.dropLast(n: Int):
List<ULong> {\n
 require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.dropLast(n: Int): List<UByte>
{\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.dropLast(n: Int):
List<UShort> {\n require(n >= 0) { \"Requested element count $n is less than zero.\" }\n return take((size -
n).coerceAtLeast(0))\n}\n\n/**\n * Returns a list containing all elements except last [n] elements.\n *\n *\n@throws
IllegalArgumentException
if [n] is negative.\n *\n *\n@sample
samples.collections.Collections.Transformations.drop\n

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* Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.dropLastWhile(predicate: (UInt) -> Boolean): List<UInt> {\n for (index in lastIndex downTo 0) {\n
if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.dropLastWhile(predicate: (ULong) -> Boolean): List<ULong> {\n for (index in lastIndex downTo 0)
{\n if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the
given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.dropLastWhile(predicate: (UByte) -> Boolean): List<UByte> {\n for (index in lastIndex downTo 0)
{\n if (!predicate(this[index])) {\n return take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except last elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.dropLastWhile(predicate: (UShort) -> Boolean): List<UShort> {\n for (index in lastIndex downTo
0) {\n if (!predicate(this[index])) {\n return
take(index + 1)\n }\n }\n return emptyList()\n}\n\n/**\n * Returns a list containing all elements except first
elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.dropWhile(predicate: (UInt) -> Boolean): List<UInt> {\n var yielding = false\n val list =
ArrayList<UInt>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item)) {\n
list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample
samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.dropWhile(predicate: (ULong) -> Boolean):
List<ULong> {\n var yielding = false\n val list = ArrayList<ULong>()\n for (item in this)\n if
(yielding)\n list.add(item)\n else if (!predicate(item)) {\n list.add(item)\n yielding = true\n
}\n return list\n}\n\n/**\n * Returns a list containing all elements except first elements that satisfy the given
[predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.dropWhile(predicate: (UByte) -> Boolean): List<UByte> {\n var yielding = false\n val list =
ArrayList<UByte>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item))
{\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing all
elements except first elements that satisfy the given [predicate].\n * \n * @sample samples.collections.Collections.Transformations.drop\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.dropWhile(predicate: (UShort) -> Boolean): List<UShort> {\n var yielding = false\n val list =
ArrayList<UShort>()\n for (item in this)\n if (yielding)\n list.add(item)\n else if (!predicate(item))
{\n list.add(item)\n yielding = true\n }\n return list\n}\n\n/**\n * Returns a list containing only
elements matching the given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filter(predicate: (UInt) -> Boolean): List<UInt> {\n return filterTo(ArrayList<UInt>(),

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predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filter(predicate: (ULong) -> Boolean): List<ULong> {\n return filterTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.filter(predicate: (UByte) -> Boolean): List<UByte> {\n return filterTo(ArrayList<UByte>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.filter(predicate: (UShort) -> Boolean): List<UShort> {\n return filterTo(ArrayList<UShort>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param [predicate] function that takes
the index of an element and the element itself\n * and returns the result of predicate evaluation on the element.\n * \n
* @sample samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filterIndexed(predicate: (index: Int, UInt) -> Boolean): List<UInt> {\n return
filterIndexedTo(ArrayList<UInt>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filterIndexed(predicate:
(index: Int, ULong) -> Boolean): List<ULong> {\n return filterIndexedTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing only elements matching the given [predicate].\n * @param
[predicate] function that takes the index of an element and the element itself\n * and returns the result of predicate
evaluation on the element.\n * \n * @sample samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.filterIndexed(predicate: (index: Int, UByte) -> Boolean): List<UByte> {\n return
filterIndexedTo(ArrayList<UByte>(), predicate)\n}\n\n/**\n * Returns a list containing only elements matching the
given [predicate].\n * @param [predicate] function that takes the index of an element and the element itself\n * and
returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexed\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.filterIndexed(predicate: (index: Int, UShort) -> Boolean): List<UShort> {\n return
filterIndexedTo(ArrayList<UShort>(), predicate)\n}\n\n/**\n * Appends all elements matching the given [predicate]
to the given [destination].\n * @param [predicate] function that takes the index of an element and the element
itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterIndexedTo(destination: C, predicate: (index: Int, UInt) -> Boolean): C
{\n forEachIndexed { index, element ->\n if (predicate(index, element)) destination.add(element)\n }\n return destination\n}\n\n/**\n * Appends all elements matching the given [predicate] to the
given [destination].\n * @param [predicate] function that takes the index of an element and the element itself\n *
and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :

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MutableCollection<in ULong>> ULongArray.filterIndexedTo(destination: C, predicate: (index: Int, ULong) ->
Boolean): C {\n forEachIndexed { index, element ->\n if (predicate(index, element))
destination.add(element)\n }\n return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <C : MutableCollection<in UByte>> UByteArray.filterIndexedTo(destination: C, predicate: (index: Int,
UByte) -> Boolean): C {\n forEachIndexed { index, element ->\n if (predicate(index, element))
destination.add(element)\n }\n return destination\n}\n\n/**\n * Appends all elements matching the given
[predicate] to the given [destination].\n * @param [predicate] function that takes the index of an element and the
element itself\n * and returns the result of predicate evaluation on the element.\n * \n * @sample
samples.collections.Collections.Filtering.filterIndexedTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterIndexedTo(destination: C, predicate: (index: Int, UShort) ->
Boolean): C {\n forEachIndexed { index, element ->\n if (predicate(index, element))
destination.add(element)\n }\n return destination\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.filterNot(predicate: (UInt) -> Boolean): List<UInt> {\n return filterNotTo(ArrayList<UInt>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.filterNot(predicate: (ULong) -> Boolean): List<ULong> {\n return filterNotTo(ArrayList<ULong>(),
predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the given [predicate].\n * \n * @sample
samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.filterNot(predicate: (UByte) -> Boolean): List<UByte> {\n return
filterNotTo(ArrayList<UByte>(), predicate)\n}\n\n/**\n * Returns a list containing all elements not matching the
given [predicate].\n * \n * @sample samples.collections.Collections.Filtering.filter\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.filterNot(predicate: (UShort) -> Boolean): List<UShort> {\n return
filterNotTo(ArrayList<UShort>(), predicate)\n}\n\n/**\n * Appends all elements not matching the given [predicate]
to the given [destination].\n * \n * @sample samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterNotTo(destination: C, predicate: (UInt) -> Boolean): C {\n for
(element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterNotTo(destination: C, predicate: (ULong) -> Boolean): C {\n for
(element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends
all elements not matching the given [predicate] to the given [destination].\n * \n * @sample
samples.collections.Collections.Filtering.filterTo\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterNotTo(destination: C, predicate: (UByte) -> Boolean): C {\n for
(element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all

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elements

not matching the given [predicate] to the given [destination].\n \* \n \* @sample

samples.collections.Collections.Filtering.filterTo\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterNotTo(destination: C, predicate: (UShort) -> Boolean): C {\n for (element in this) if (!predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends
all elements matching the given [predicate] to the given [destination].\n * \n * @sample
```

samples.collections.Collections.Filtering.filterTo\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UInt>> UIntArray.filterTo(destination: C, predicate: (UInt) -> Boolean): C {\n for (element
in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all elements
matching the given [predicate] to the given [destination].\n
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```
 * \n * @sample samples.collections.Collections.Filtering.filterTo\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in ULong>> ULongArray.filterTo(destination: C, predicate: (ULong) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n * \n * @sample
```

samples.collections.Collections.Filtering.filterTo\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UByte>> UByteArray.filterTo(destination: C, predicate: (UByte) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Appends all
elements matching the given [predicate] to the given [destination].\n * \n * @sample
```

samples.collections.Collections.Filtering.filterTo\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <C :
MutableCollection<in UShort>> UShortArray.filterTo(destination: C, predicate: (UShort) -> Boolean): C {\n for
(element in this) if (predicate(element)) destination.add(element)\n return destination\n}\n\n/**\n * Returns a list
containing elements at indices in the specified [indices] range.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.slice(indices: IntRange):
List<UInt> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive +
1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.slice(indices: IntRange):
List<ULong> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n
```

```
 * Returns a list containing elements at indices in the specified [indices] range.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.slice(indices: IntRange):
List<UByte> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at indices in the specified [indices] range.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.slice(indices: IntRange):
List<UShort> {\n if (indices.isEmpty()) return listOf()\n return copyOfRange(indices.start, indices.endInclusive
+ 1).asList()\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.slice(indices: Iterable<Int>):
List<UInt> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<UInt>(size)\n for (index
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 in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n * Returns a list containing elements at
specified [indices].\n * \n * @SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
```

```
ULongArray.slice(indices: Iterable<Int>): List<ULong> {\n val size = indices.collectionSizeOrDefault(10)\n if
(size == 0) return emptyList()\n val list = ArrayList<ULong>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n * Returns a list containing elements at specified [indices].\n
```

```

*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.slice(indices: Iterable<Int>):
List<UByte> {\n val size = indices.collectionSizeOrDefault(10)\n if (size == 0) return emptyList()\n val list =
ArrayList<UByte>(size)\n for (index in indices) {\n list.add(get(index))\n }\n return list\n}\n\n/**\n *
Returns a list containing elements at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.slice(indices: Iterable<Int>): List<UShort> {\n val size = indices.collectionSizeOrDefault(10)\n
if (size == 0) return emptyList()\n val list = ArrayList<UShort>(size)\n for (index in indices) {\n
list.add(get(index))\n }\n return list\n}\n\n/**\n * Returns an array containing elements of this array at specified
[indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sliceArray(indices:
Collection<Int>): UIntArray {\n return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sliceArray(indices:
Collection<Int>): ULongArray {\n return ULongArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array
containing elements of this array at specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sliceArray(indices: Collection<Int>): UByteArray {\n return
UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements of this array at
specified [indices].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.sliceArray(indices: Collection<Int>): UShortArray {\n return
UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the
specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.sliceArray(indices: IntRange): UIntArray {\n return UIntArray(storage.sliceArray(indices))\n}\n\n/**\n
* Returns an array containing elements at indices in the specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.sliceArray(indices: IntRange): ULongArray {\n return ULongArray(storage.sliceArray(indices))\n}\n\n/**\n
* Returns an array containing elements at indices in the specified
[indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sliceArray(indices: IntRange): UByteArray {\n return
UByteArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns an array containing elements at indices in the
specified [indices] range.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.sliceArray(indices: IntRange): UShortArray {\n return
UShortArray(storage.sliceArray(indices))\n}\n\n/**\n * Returns a list containing first [n] elements.\n
*\n * @throws IllegalArgumentException if [n] is negative.\n
*\n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.take(n: Int): List<UInt> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n if (n == 0) return emptyList()\n if (n >=
size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list = ArrayList<UInt>(n)\n
for (item in this) {\n list.add(item)\n if (++count == n)\n break\n }\n return list\n}\n\n/**\n
* Returns a list containing first [n] elements.\n
*\n * @throws IllegalArgumentException if [n] is negative.\n
*\n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.take(n: Int): List<ULong> {\n
require(n >= 0) { "Requested element count $n is less than zero." }\n if (n == 0) return emptyList()\n if (n >=
size) return toList()\n if (n == 1) return listOf(this[0])\n var count = 0\n val list = ArrayList<ULong>(n)\n
for (item in this) {\n list.add(item)\n if (++count == n)\n break\n }\n return list\n}\n\n/**\n
* Returns a list containing first [n] elements.\n
*\n * @throws IllegalArgumentException if [n] is negative.\n
*\n * @sample
samples.collections.Collections.Transformations.take\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic

```

```

fun UByteArray.take(n: Int): List<UByte> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<UByte>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}
// Returns a list containing first [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun UShortArray.take(n: Int): List<UShort> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 if (n >= size) return toList()
 if (n == 1) return listOf(this[0])
 var count = 0
 val list = ArrayList<UShort>(n)
 for (item in this) {
 list.add(item)
 if (++count == n) break
 }
 return list
}
// Returns a list containing last [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun UIntArray.takeLast(n: Int): List<UInt> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 val size = size
 if (n >= size) return toList()
 if (n == 1) return listOf(this[size - 1])
 val list = ArrayList<UInt>(n)
 for (index in size - n until size)
 list.add(this[index])
 return list
}
// Returns a list containing last [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun ULongArray.takeLast(n: Int): List<ULong> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 val size = size
 if (n >= size) return toList()
 if (n == 1) return listOf(this[size - 1])
 val list = ArrayList<ULong>(n)
 for (index in size - n until size)
 list.add(this[index])
 return list
}
// Returns a list containing last [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun UByteArray.takeLast(n: Int): List<UByte> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 val size = size
 if (n >= size) return toList()
 if (n == 1) return listOf(this[size - 1])
 val list = ArrayList<UByte>(n)
 for (index in size - n until size)
 list.add(this[index])
 return list
}
// Returns a list containing last [n] elements.
// @throws IllegalArgumentException if [n] is negative.
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesnpublic fun UShortArray.takeLast(n: Int): List<UShort> {
 require(n >= 0) { "Requested element count $n is less than zero." }
 if (n == 0) return emptyList()
 val size = size
 if (n >= size) return toList()
 if (n == 1) return listOf(this[size - 1])
 val list = ArrayList<UShort>(n)
 for (index in size - n until size)
 list.add(this[index])
 return list
}
// Returns a list containing last elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun UIntArray.takeLastWhile(predicate: (UInt) -> Boolean): List<UInt> {
 for (index in lastIndex downTo 0) {
 if (!predicate(this[index])) return drop(index + 1)
 }
 return toList()
}
// Returns a list containing last elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun ULongArray.takeLastWhile(predicate: (ULong) -> Boolean): List<ULong> {
 for (index in lastIndex downTo 0) {
 if (!predicate(this[index])) return drop(index + 1)
 }
 return toList()
}
// Returns a list containing last elements satisfying the given [predicate].
// @sample samples.collections.Collections.Transformations.take

*\/n@SinceKotlin("1.3")n@ExperimentalUnsignedTypesn@kotlin.internal.InlineOnlynpublic inline fun

```

```

ByteArray.takeLastWhile(predicate: (Byte) -> Boolean): List<Byte> {
 for (index in lastIndex downTo 0) {
 if (!predicate(this[index])) {
 return drop(index + 1)
 }
 }
 return toList()
}

Returns a list containing last elements satisfying the given [predicate].

@sample
samples.collections.Collections.Transformations.take

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UShortArray.takeLastWhile(predicate: (UShort) -> Boolean): List<UShort> {
 for (index in lastIndex downTo 0) {
 if (!predicate(this[index])) {
 return drop(index + 1)
 }
 }
 return toList()
}

Returns a list containing first elements satisfying the given [predicate].

@sample
samples.collections.Collections.Transformations.take

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UIntArray.takeWhile(predicate: (UInt) -> Boolean): List<UInt> {
 val list = ArrayList<UInt>()
 for (item in this) {
 if (!predicate(item)) {
 break
 }
 list.add(item)
 }
 return list
}

Returns a list containing first elements satisfying the given [predicate].

@sample
samples.collections.Collections.Transformations.take

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ULongArray.takeWhile(predicate: (ULong) -> Boolean): List<ULong> {
 val list = ArrayList<ULong>()
 for (item in this) {
 if (!predicate(item)) {
 break
 }
 list.add(item)
 }
 return list
}

Returns a list containing first elements satisfying the given [predicate].

@sample
samples.collections.Collections.Transformations.take

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ByteArray.takeWhile(predicate: (Byte) -> Boolean): List<Byte> {
 val list = ArrayList<Byte>()
 for (item in this) {
 if (!predicate(item)) {
 break
 }
 list.add(item)
 }
 return list
}

Returns a list containing first elements satisfying the given [predicate].

@sample
samples.collections.Collections.Transformations.take

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UShortArray.takeWhile(predicate: (UShort) -> Boolean): List<UShort> {
 val list = ArrayList<UShort>()
 for (item in this) {
 if (!predicate(item)) {
 break
 }
 list.add(item)
 }
 return list
}

Reverses elements in the array in-place.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UIntArray.reverse(): Unit {
 storage.reverse()
}

Reverses elements in the array in-place.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ULongArray.reverse(): Unit {
 storage.reverse()
}

Reverses elements in the array in-place.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
ByteArray.reverse(): Unit {
 storage.reverse()
}

Reverses elements in the array in-place.

@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UShortArray.reverse(): Unit {
 storage.reverse()
}

Reverses elements of the array in the specified range in-place.

@param fromIndex the start of the range (inclusive) to reverse.
@param toIndex the end of the range (exclusive) to reverse.
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

@SinceKotlin("1.4")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public inline fun
UIntArray.reverse(fromIndex: Int, toIndex: Int): Unit {
 storage.reverse(fromIndex, toIndex)
}

Reverses elements of the array in the specified range in-place.

@param fromIndex the start of the range (inclusive) to reverse.
@param toIndex the end of the range (exclusive) to reverse.
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].

@SinceKotlin("1.4")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly
public

```



```

inline fun ULongArray.reverse(fromIndex: Int, toIndex: Int): Unit {
 storage.reverse(fromIndex, toIndex)
}
/**
 * Reverses elements of the array in the specified range in-place.
 * @param fromIndex the start of the range (inclusive) to reverse.
 * @param toIndex the end of the range (exclusive) to reverse.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UByteArray.reverse(fromIndex: Int, toIndex: Int): Unit {
 storage.reverse(fromIndex, toIndex)
}
/**
 * Reverses elements of the array in the specified range in-place.
 * @param fromIndex the start of the range (inclusive) to reverse.
 * @param toIndex the end of the range (exclusive) to reverse.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UShortArray.reverse(fromIndex: Int, toIndex: Int): Unit {
 storage.reverse(fromIndex, toIndex)
}
/**
 * Returns a list with elements in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UIntArray.reversed(): List<UInt> {
 if (isEmpty()) return emptyList()
 val list = toMutableList()
 list.reverse()
 return list
}
/**
 * Returns a list with elements in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun ULongArray.reversed(): List<ULong> {
 if (isEmpty()) return emptyList()
 val list = toMutableList()
 list.reverse()
 return list
}
/**
 * Returns a list with elements in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UByteArray.reversed(): List<UByte> {
 if (isEmpty()) return emptyList()
 val list = toMutableList()
 list.reverse()
 return list
}
/**
 * Returns a list with elements in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun UShortArray.reversed(): List<UShort> {
 if (isEmpty()) return emptyList()
 val list = toMutableList()
 list.reverse()
 return list
}
/**
 * Returns an array with elements of this array in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UIntArray.reversedArray(): UIntArray {
 return UIntArray(storage.reversedArray())
}
/**
 * Returns an array with elements of this array in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun ULongArray.reversedArray(): ULongArray {
 return ULongArray(storage.reversedArray())
}
/**
 * Returns an array with elements of this array in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UByteArray.reversedArray(): UByteArray {
 return UByteArray(storage.reversedArray())
}
/**
 * Returns an array with elements of this array in reversed order.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UShortArray.reversedArray(): UShortArray {
 return UShortArray(storage.reversedArray())
}
/**
 * Randomly shuffles elements in this array in-place.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UIntArray.shuffle(): Unit {
 shuffle(Random)
}
/**
 * Randomly shuffles elements in this array in-place.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun ULongArray.shuffle(): Unit {
 shuffle(Random)
}
/**
 * Randomly shuffles elements in this array in-place.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UByteArray.shuffle(): Unit {
 shuffle(Random)
}
/**
 * Randomly shuffles elements in this array in-place.
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UShortArray.shuffle(): Unit {
 shuffle(Random)
}
/**
 * Randomly shuffles elements in this array in-place using the specified [random] instance as the source of randomness.
 * See:
 * https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
public fun UIntArray.shuffle(random: Random): Unit {
 for (i in lastIndex downTo 1) {
 val j = random.nextInt(i + 1)
 val copy = this[i]
 this[i] =

```

```

this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified
[random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.shuffle(random: Random):
Unit {\n for (i in lastIndex downTo 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] =
this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified
[random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.shuffle(random: Random):
Unit {\n for (i in lastIndex downTo 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] =
this[j]\n this[j] = copy\n }\n}\n\n/**\n * Randomly shuffles elements in this array in-place using the specified
[random] instance as the source of randomness.\n * \n * See:
https://en.wikipedia.org/wiki/Fisher%20%80%93Yates_shuffle#The_modern_algorithm\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.shuffle(random: Random):
Unit {\n for (i in lastIndex downTo 1) {\n val j = random.nextInt(i + 1)\n val copy = this[i]\n this[i] =
this[j]\n this[j] = copy\n }\n}\n\n/**\n * Sorts elements in the array in-place descending according to their
natural sort order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.sortDescending(): Unit {\n if (size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Sorts
elements in the array in-place descending according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sortDescending(): Unit {\n if
(size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Sorts elements in the array in-place descending
according to their natural sort order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sortDescending(): Unit {\n if (size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Sorts
elements in the array in-place descending according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sortDescending(): Unit {\n if
(size > 1) {\n sort()\n reverse()\n }\n}\n\n/**\n * Returns a list of all elements sorted according to their
natural sort
order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sorted(): List<UInt> {\n
return copyOf().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted according to their natural
sort order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sorted():
List<ULong> {\n return copyOf().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all elements sorted
according to their natural sort order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sorted(): List<UByte> {\n return copyOf().apply { sort() }.asList()\n}\n\n/**\n * Returns a list of all
elements sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sorted(): List<UShort> {\n
return copyOf().apply { sort() }.asList()\n}\n\n/**\n * Returns an array with all elements of this array sorted
according to their natural sort order.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.sortedArray(): UIntArray {\n if (isEmpty()) return this\n return this.copyOf().apply { sort()
}\n}\n\n/**\n * Returns an array with all elements of this array sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sortedArray(): ULongArray
{\n if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all
elements of this array sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sortedArray(): UByteArray {\n
if (isEmpty()) return this\n return this.copyOf().apply { sort() }\n}\n\n/**\n * Returns an array with all elements
of this array sorted according to their natural sort order.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sortedArray(): UShortArray
{\n if (isEmpty()) return this\n

```



```

array.\n *^\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.asShortArray(): ShortArray {\n return storage}\n}\n\n/**\n * Returns an array of type [UByteArray],
which is a view of this array where each element is an
unsigned reinterpretation\n * of the corresponding element of this array.\n
*^\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.asUByteArray(): UByteArray {\n return UByteArray(this)\n}\n}\n\n/**\n * Returns an array of type
[UIntArray], which is a view of this array where each element is an unsigned reinterpretation\n * of the
corresponding element of this array.\n
*^\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.asUIntArray(): UIntArray {\n return UIntArray(this)\n}\n}\n\n/**\n * Returns an array of type
[ULongArray], which is a view of this array where each element is an unsigned reinterpretation\n * of the
corresponding element of this array.\n
*^\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.asULongArray(): ULongArray {\n return ULongArray(this)\n}\n}\n\n/**\n * Returns an array of type
[UShortArray],
which is a view of this array where each element is an unsigned reinterpretation\n * of the corresponding element of
this array.\n
*^\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun ShortArray.asUShortArray(): UShortArray {\n return UShortArray(this)\n}\n}\n\n/**\n * Returns `true` if the
two specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements
in the same order.\n
*^\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic infix fun UIntArray.contentEquals(other: UIntArray): Boolean {\n
return this.contentEquals(other)\n}\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to
one another,\n * i.e. contain the same number of the same elements in the same order.\n
*^\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic infix fun ULongArray.contentEquals(other: ULongArray):
Boolean {\n return this.contentEquals(other)\n}\n}\n\n/**\n * Returns `true` if the two specified arrays are
structurally equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n
*^\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic infix fun UByteArray.contentEquals(other: UByteArray): Boolean
{\n return this.contentEquals(other)\n}\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal
to one another,\n * i.e. contain the same number of the same elements in the same order.\n
*^\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic
infix fun UShortArray.contentEquals(other: UShortArray): Boolean {\n return
this.contentEquals(other)\n}\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally* equal to one
another,\n * i.e. contain the same number of the same elements in the same order.\n
*^\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun UIntArray?.contentEquals(other:
UIntArray?): Boolean {\n return this?.storage.contentEquals(other?.storage)\n}\n}\n\n/**\n * Returns `true` if the two
specified arrays are *structurally* equal to one another,\n * i.e. contain the same number of the same elements in the
same order.\n
*^\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun
ULongArray?.contentEquals(other: ULongArray?): Boolean {\n return
this?.storage.contentEquals(other?.storage)\n}\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally*
equal to one another,\n * i.e. contain the same number of the same elements

```

```

in the same order.\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun
UByteArray?.contentEquals(other: UByteArray?): Boolean {\n return
this?.storage.contentEquals(other?.storage)\n}\n\n/**\n * Returns `true` if the two specified arrays are *structurally*
equal to one another,\n * i.e. contain the same number of the same elements in the same order.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic infix fun UShortArray?.contentEquals(other:
UShortArray?): Boolean {\n return this?.storage.contentEquals(other?.storage)\n}\n\n/**\n * Returns a hash code
based on the contents of this array as if it is [List].\n *\n@Deprecated("Use Kotlin compiler 1.4 to avoid
deprecation warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.contentHashCode(): Int {\n return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.contentHashCode(): Int {\n return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.contentHashCode(): Int {\n return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if it is [List].\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.contentHashCode(): Int {\n return
this.contentHashCode()\n}\n\n/**\n * Returns a hash code based
on the contents of this array as if it is [List].\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray?.contentHashCode(): Int {\n return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash
code based on the contents of this array as if it is [List].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray?.contentHashCode(): Int {\n
return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash code based on the contents of this array as if
it is [List].\n *\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray?.contentHashCode(): Int {\n return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a hash
code based on the contents of this array as if it is [List].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray?.contentHashCode(): Int {\n
return this?.storage.contentHashCode()\n}\n\n/**\n * Returns a string representation of the contents of the specified
array
as if it is [List].\n *\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n@Deprecated("Use Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.contentToString(): String {\n return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it
is [List].\n *\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.contentToString(): String {\n return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it
is [List].\n *\n * @sample samples.collections.Arrays.ContentOperations.contentToString\n *\n@Deprecated("Use
Kotlin compiler 1.4 to avoid deprecation
warning.")\n@SinceKotlin("1.3")\n@DeprecatedSinceKotlin(hiddenSince =
"1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.contentToString(): String {\n return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it
is

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[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n * \n @Deprecated(\n Use
Kotlin compiler 1.4 to avoid deprecation
warning.\n)\n @SinceKotlin(\n 1.3\n)\n @DeprecatedSinceKotlin(hiddenSince =
\n 1.4\n)\n @ExperimentalUnsignedTypes\n public fun UShortArray.contentToString(): String {\n return
this.contentToString()\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n @SinceKotlin(\n 1.4\n)\n @ExperimentalUnsignedTypes\n public fun UIntArray?.contentToString(): String {\n
return this?.joinToString(\n
\n, "[", "]") ?: "null"\n}\n\n/**\n * Returns a string representation of the contents of the specified array as if it is
[List].\n * \n * @sample samples.collections.Arrays.ContentOperations.contentToString\n
*\n @SinceKotlin(\n 1.4\n)\n @ExperimentalUnsignedTypes\n public fun ULongArray?.contentToString(): String {\n
return this?.joinToString(\n
\n, "[", "]") ?: "null"\n}\n\n/**\n * Returns a string representation of the contents of
the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n @SinceKotlin(\n 1.4\n)\n @ExperimentalUnsignedTypes\n public fun UByteArray?.contentToString(): String {\n
return this?.joinToString(\n
\n, "[", "]") ?: "null"\n}\n\n/**\n * Returns a string representation of the contents of
the specified array as if it is [List].\n * \n * @sample
samples.collections.Arrays.ContentOperations.contentToString\n
*\n @SinceKotlin(\n 1.4\n)\n @ExperimentalUnsignedTypes\n public
fun UShortArray?.contentToString(): String {\n return this?.joinToString(\n
\n, "[", "]") ?: "null"\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n * It's allowed to pass the
same array in the [destination] and even specify the subrange so that it overlaps with the destination range.\n * \n *
@param destination the array to copy to.\n * @param destinationOffset the position in the [destination] array to
copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n *
@param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n * \n * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
array indices or when `startIndex > endIndex`.\n * @throws IndexOutOfBoundsException when the subrange
doesn't fit into the [destination] array starting at the specified [destinationOffset],\n
* or when that index is out of the [destination] array indices range.\n * \n * @return the [destination] array.\n
*\n @SinceKotlin(\n 1.3\n)\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun
UIntArray.copyInto(destination: UIntArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size):
UIntArray {\n storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)\n return
destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n *
It's allowed to pass the same array in the [destination] and even specify the subrange so that it overlaps with the
destination range.\n * \n * @param destination the array to copy to.\n * @param destinationOffset the position in the
[destination] array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive) of the subrange to copy,
0 by default.\n * @param endIndex the end (exclusive) of the subrange to copy,
size of this array by default.\n * \n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when
[startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`.\n * @throws
IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified
[destinationOffset],\n * or when that index is out of the [destination] array indices range.\n * \n * @return the
[destination] array.\n
*\n @SinceKotlin(\n 1.3\n)\n @ExperimentalUnsignedTypes\n @kotlin.internal.InlineOnly\n public inline fun
ULongArray.copyInto(destination: ULongArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = size):
ULongArray {\n storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)\n return
destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and returns that array.\n * \n *
It's allowed to pass the same array in the [destination] and even specify the

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subrange so that it overlaps with the destination range.\n \* \n \* @param destination the array to copy to.\n \* @param destinationOffset the position in the [destination] array to copy to, 0 by default.\n \* @param startIndex the beginning (inclusive) of the subrange to copy, 0 by default.\n \* @param endIndex the end (exclusive) of the subrange to copy, size of this array by default.\n \* \n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex > endIndex`. \n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n \* or when that index is out of the [destination] array indices range.\n \* \n \* @return the [destination] array.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.copyInto(destination: UByteArray, destinationOffset: Int = 0, startIndex:
Int = 0, endIndex: Int = size): UByteArray {\n storage.copyInto(destination.storage, destinationOffset, startIndex,
endIndex)\n return destination\n}\n\n/**\n * Copies this array or its subrange into the [destination] array and
returns that array.\n * \n * It's allowed to pass the same array in the [destination] and even specify the subrange so
that it overlaps with the destination range.\n * \n * @param destination the array to copy to.\n * @param
destinationOffset the position in the [destination] array to copy to, 0 by default.\n * @param startIndex the
beginning (inclusive) of the subrange to copy, 0 by default.\n * @param endIndex the end (exclusive) of the
subrange to copy, size of this array by default.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this array indices or when `startIndex
> endIndex`. \n * @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination]
array starting at the specified [destinationOffset], \n * or when that index is out of the [destination] array indices
range.\n * \n * @return the [destination] array.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.copyInto(destination: UShortArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int =
size): UShortArray {\n storage.copyInto(destination.storage, destinationOffset, startIndex, endIndex)\n return
destination\n}\n\n/**\n * Returns new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.copyOf(): UIntArray {\n return UIntArray(storage.copyOf())\n}\n\n/**\n * Returns new array which is
a copy of the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.copyOf(): ULongArray {\n return ULongArray(storage.copyOf())\n}\n\n/**\n * Returns
new array which is a copy of the original array.\n * \n * @sample
samples.collections.Arrays.CopyOfOperations.copyOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.copyOf(): UByteArray {\n return UByteArray(storage.copyOf())\n}\n\n/**\n * Returns new array
which is a copy of the original array.\n * \n * @sample samples.collections.Arrays.CopyOfOperations.copyOf\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.copyOf(): UShortArray {\n return UShortArray(storage.copyOf())\n}\n\n/**\n * Returns new array
which is a copy of the original array, resized to the given [newSize].\n * The copy is either truncated or padded at
the end with zero values if necessary.\n * \n * - If [newSize] is
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less than the size of the original array, the copy array is truncated to the [newSize].\n \* - If [newSize] is greater than  
the size of the original array, the extra elements in the copy array are filled with zero values.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.copyOf(newSize: Int): UIntArray {\n return UIntArray(storage.copyOf(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either
truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than the size of the
original array, the copy array is truncated to the [newSize].\n * - If [newSize] is greater than the size of the original
array, the extra elements in the copy array are filled with zero values.\n
```

```

*^@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.copyOf(newSize: Int): ULongArray
{\n return ULongArray(storage.copyOf(newSize))\n}\n\n/**\n * Returns new array which is a copy of the original
array, resized to the given [newSize].\n * The copy is either truncated or padded at the end with zero values if
necessary.\n * \n * - If [newSize] is less than the size of the original array, the copy array is truncated to the
[newSize].\n * - If [newSize] is greater than the size of the original array, the extra elements in the copy array are
filled with zero values.\n
*^@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.copyOf(newSize: Int): UByteArray {\n return UByteArray(storage.copyOf(newSize))\n}\n\n/**\n *
Returns new array which is a copy of the original array, resized to the given [newSize].\n * The copy is either
truncated or padded at the end with zero values if necessary.\n * \n * - If [newSize] is less than the size of the
original array, the copy array is truncated to the [newSize].\n * - If [newSize]
is greater than the size of the original array, the extra elements in the copy array are filled with zero values.\n
*^@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.copyOf(newSize: Int): UShortArray {\n return UShortArray(storage.copyOf(newSize))\n}\n\n/**\n *
Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the start
of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n * @throws
IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n *
@throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*^@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.copyOfRange(fromIndex: Int, toIndex: Int): UIntArray {\n return
UIntArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n *
Returns a new array which is a copy of the specified range of the original array.\n * \n * @param fromIndex the
start of the range (inclusive) to copy.\n * @param toIndex the end of the range (exclusive) to copy.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*^@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.copyOfRange(fromIndex: Int, toIndex: Int): UByteArray {\n return
UByteArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n * Returns a new array which is a copy of the
specified range of the original array.\n * \n * @param fromIndex the start of the range (inclusive) to copy.\n *
@param toIndex the end of the range (exclusive) to copy.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of
this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*^@SinceKotlin("1.3")@ExperimentalUnsignedTypes@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.copyOfRange(fromIndex: Int, toIndex: Int): UShortArray {\n return
UShortArray(storage.copyOfRange(fromIndex, toIndex))\n}\n\n/**\n *
Fills this array or its subrange with the specified [element] value.\n * \n * @param fromIndex the start of the
range (inclusive) to fill, 0 by default.\n * @param toIndex the end of the range (exclusive) to fill, size of this
array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is
greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*^@SinceKotlin("1.3")@ExperimentalUnsignedTypes\npublic fun UIntArray.fill(element: UInt, fromIndex:

```



```

Int = 0, toIndex: Int = size): Unit {
 storage.fill(element.toInt(), fromIndex, toIndex)
}

/**
 * Fills this array or its subrange with the specified [element] value.
 * @param fromIndex the start of the range (inclusive) to fill, 0 by default.
 * @param toIndex the end of the range (exclusive) to fill, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
UIntArray.fill(element: UInt, fromIndex: Int = 0, toIndex: Int = size): Unit {
 storage.fill(element.toInt(), fromIndex, toIndex)
}

/**
 * Fills this array or its subrange with the specified [element] value.
 * @param fromIndex the start of the range (inclusive) to fill, 0 by default.
 * @param toIndex the end of the range (exclusive) to fill, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
UByteArray.fill(element: UByte, fromIndex: Int = 0, toIndex: Int = size): Unit {
 storage.fill(element.toByte(), fromIndex, toIndex)
}

/**
 * Fills this array or its subrange with the specified [element] value.
 * @param fromIndex the start of the range (inclusive) to fill, 0 by default.
 * @param toIndex the end of the range (exclusive) to fill, size of this array by default.
 * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.
 * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public fun
UShortArray.fill(element: UShort, fromIndex: Int = 0, toIndex: Int = size): Unit {
 storage.fill(element.toShort(), fromIndex, toIndex)
}

/**
 * Returns the range of valid indices for the array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public inline val UIntArray.indices: IntRange
 get() = storage.indices

/**
 * Returns the range of valid indices for the array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public inline val ULongArray.indices: IntRange
 get() = storage.indices

/**
 * Returns the range of valid indices for the array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public inline val UByteArray.indices: IntRange
 get() = storage.indices

/**
 * Returns the last valid index for the array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public inline val UIntArray.lastIndex: Int
 get() = storage.lastIndex

/**
 * Returns the last valid index for the array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public inline val ULongArray.lastIndex: Int
 get() = storage.lastIndex

/**
 * Returns the last valid index for the array.
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
public inline val UByteArray.lastIndex: Int
 get() = storage.lastIndex

/**
 * Returns an array containing all elements of the original array and then the given [element].
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun UIntArray.plus(element: UInt): UIntArray {
 return UIntArray(storage + element.toInt())
}

/**
 * Returns an array containing all elements of the original array and then the given [element].
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun ULongArray.plus(element: ULong): ULongArray {
 return ULongArray(storage + element.toLong())
}

/**
 * Returns an array containing all elements of the original array and then the given [element].
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun UByteArray.plus(element: UByte): UByteArray {
 return UByteArray(storage + element.toByte())
}

/**
 * Returns an array containing all elements of the original array and then the given [element].
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline operator fun UShortArray.plus(element: UShort): UShortArray {
 return UShortArray(storage +

```

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element.toShort())\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] collection.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator
fun UIntArray.plus(elements: Collection<UInt>): UIntArray {\n var index = size\n val result =
storage.copyOf(size + elements.size)\n for (element in elements) result[index++] = element.toInt()\n return
UIntArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and
then all elements of the given [elements] collection.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator fun ULongArray.plus(elements:
Collection<ULong>): ULongArray {\n var index = size\n val result = storage.copyOf(size + elements.size)\n
for (element in elements) result[index++] = element.toLong()\n return ULongArray(result)\n}\n\n/**\n * Returns
an array containing all elements of the original array and then all elements of the given [elements] collection.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic operator fun UByteArray.plus(elements:
Collection<UByte>): UByteArray {\n var index = size\n val result = storage.copyOf(size + elements.size)\n
for (element in elements) result[index++] = element.toByte()\n return UByteArray(result)\n}\n\n/**\n * Returns
an array containing all elements of the original array and then all elements of the given [elements] collection.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
operator fun UShortArray.plus(elements: Collection<UShort>): UShortArray {\n var index = size\n val result =
storage.copyOf(size + elements.size)\n for (element in elements) result[index++] = element.toShort()\n return
UShortArray(result)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all
elements of the given [elements] array.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UIntArray.plus(elements: UIntArray): UIntArray {\n return UIntArray(storage + elements.storage)\n}\n\n/**\n *
Returns an array containing all elements of the original array and then all elements of the given [elements] array.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
ULongArray.plus(elements: ULongArray): ULongArray {\n return ULongArray(storage +
elements.storage)\n}\n\n/**\n * Returns an array containing all elements
of the original array and then all elements of the given [elements] array.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UByteArray.plus(elements: UByteArray): UByteArray {\n return UByteArray(storage +
elements.storage)\n}\n\n/**\n * Returns an array containing all elements of the original array and then all elements
of the given [elements] array.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline operator fun
UShortArray.plus(elements: UShortArray): UShortArray {\n return UShortArray(storage +
elements.storage)\n}\n\n/**\n * Sorts the array in-place.\n */\n@sample
samples.collections.Arrays.Sorting.sortArray\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UIntArray.sort(): Unit {\n if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n */\n@sample
samples.collections.Arrays.Sorting.sortArray\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.sort(): Unit {\n if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n */\n@sample
samples.collections.Arrays.Sorting.sortArray\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UByteArray.sort(): Unit {\n if (size > 1)
sortArray(this, 0, size)\n}\n\n/**\n * Sorts the array in-place.\n */\n@sample
samples.collections.Arrays.Sorting.sortArray\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
fun UShortArray.sort(): Unit {\n if (size > 1) sortArray(this, 0, size)\n}\n\n/**\n * Sorts a range in the array in-
place.\n */\n@sample\n */\n@param fromIndex the start of the range (inclusive) to sort, 0 by default.\n */\n@param toIndex the end
of the range (exclusive) to sort, size of this array by default.\n */\n@throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n */\n@throws
IllegalArgumentException if

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[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.sort(fromIndex: Int = 0, toIndex:
Int = size): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n sortArray(this, fromIndex,
toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the range
(inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive) to sort, size of this array by
default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than
the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n * \n *
@sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n AbstractList.checkRangeIndexes(fromIndex,
toIndex, size)\n sortArray(this, fromIndex, toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n *
@param fromIndex the start of the range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range
(exclusive) to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is
less than zero or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if
[fromIndex] is greater than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n sortArray(this,
fromIndex, toIndex)\n}\n\n/**\n * Sorts a range in the array in-place.\n * \n * @param fromIndex the start of the
range (inclusive) to sort, 0 by default.\n * @param toIndex the end of the range (exclusive)
to sort, size of this array by default.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero
or [toIndex] is greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater
than [toIndex].\n * \n * @sample samples.collections.Arrays.Sorting.sortRangeOfArray\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.sort(fromIndex: Int = 0,
toIndex: Int = size): Unit {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, size)\n sortArray(this,
fromIndex, toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are
sorted descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive)
to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException
if [fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException
if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UIntArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n reverse(fromIndex,
toIndex)\n}\n\n/**\n * Sorts elements of the array in the specified range in-place.\n * The elements are sorted
descending according to their natural sort order.\n * \n * @param fromIndex the start of the range (inclusive) to
sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if
[fromIndex] is less than zero or [toIndex] is greater than the size of this array.\n * @throws
IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
ULongArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements
of the array in the specified range
in-place.\n * The elements are sorted descending according to their natural sort order.\n * \n * @param fromIndex
the start of the range (inclusive) to sort.\n * @param toIndex the end of the range (exclusive) to sort.\n * \n *
@throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is greater than the size of this
array.\n * @throws IllegalArgumentException if [fromIndex] is greater than [toIndex].\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UByteArray.sortDescending(fromIndex:
Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n reverse(fromIndex, toIndex)\n}\n\n/**\n * Sorts elements
of the array in the specified range in-place.\n * The elements are sorted descending according to their natural sort
order.\n * \n * @param fromIndex the start of the range (inclusive) to sort.\n * @param toIndex the end of the range
(exclusive) to sort.\n * \n * @throws IndexOutOfBoundsException if [fromIndex] is less than zero or [toIndex] is

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greater than the size of this array.\n * @throws IllegalArgumentException if [fromIndex] is greater than
[toIndex].\n */\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
UShortArray.sortDescending(fromIndex: Int, toIndex: Int): Unit {\n sort(fromIndex, toIndex)\n}
reverse(fromIndex, toIndex)\n}\n\n/**\n * Returns an array of type [ByteArray], which is a copy of this array where
each element is a signed reinterpretation\n * of the corresponding element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.toByteArray(): ByteArray {\n return storage.copyOf()\n}\n\n/**\n * Returns an array of type
[IntArray], which is a copy of this array where each element is a signed reinterpretation\n * of the corresponding
element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.toIntArray(): IntArray {\n return storage.copyOf()\n}\n\n/**\n * Returns an array of type [LongArray], which is a copy of this array where each element is a signed
reinterpretation\n * of the corresponding element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.toLongArray(): LongArray {\n return storage.copyOf()\n}\n\n/**\n * Returns an array of type
[ShortArray], which is a copy of this array where each element is a signed reinterpretation\n * of the corresponding
element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.toShortArray(): ShortArray {\n return storage.copyOf()\n}\n\n/**\n * Returns a *typed* object array
containing all of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.toTypedArray(): Array<UInt>
{\n return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object
array containing all of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.toTypedArray():
Array<ULong> {\n return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object array
containing all of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.toTypedArray():
Array<UByte> {\n return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns a *typed* object array
containing all of the elements of this primitive array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.toTypedArray():
Array<UShort> {\n return Array(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of UByte containing
all of the elements of this generic array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Array<out UByte>.toUByteArray(): UByteArray {\n return UByteArray(size) { index -> this[index]
}\n}\n\n/**\n * Returns an array of type [UByteArray], which is a copy of this array where each element is an
unsigned reinterpretation\n * of the corresponding element of this array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ByteArray.toUByteArray(): UByteArray {\n return UByteArray(this.copyOf())\n}\n\n/**\n * Returns an array of
UInt containing all of the elements of this generic array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Array<out UInt>.toUIntArray(): UIntArray
{\n return UIntArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type [UIntArray], which is a
copy of this array where each element is an unsigned reinterpretation\n * of the corresponding element of this
array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
IntArray.toUIntArray(): UIntArray {\n return UIntArray(this.copyOf())\n}\n\n/**\n * Returns an array of ULong containing all of the elements of this generic array.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Array<out ULong>.toULongArray():
ULongArray {\n return ULongArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type
[ULongArray], which is a copy of this array where each element is an unsigned reinterpretation\n * of the
corresponding element of this array.\n */

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
LongArray.toULongArray(): ULongArray {\n return ULongArray(this.copyOf())\n}\n\n/**\n * Returns an array
of UShort containing all of the elements of this generic array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Array<out UShort>.toUShortArray():
UShortArray {\n return UShortArray(size) { index -> this[index] }\n}\n\n/**\n * Returns an array of type
[UShortArray], which is a copy of this array where each element is an unsigned reinterpretation\n
 * of the corresponding element of this array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ShortArray.toUShortArray(): UShortArray {\n return UShortArray(this.copyOf())\n}\n\n/**\n * Returns a [Map]
where keys are elements from the given array and values are\n * produced by the [valueSelector] function applied to
each element.\n * \n * If any two elements are equal, the last one gets added to the map.\n * \n * The returned map
preserves the entry iteration order of the original array.\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UIntArray.associateWith(valueSelector: (UInt) -> V): Map<UInt, V> {\n val result = LinkedHashMap<UInt,
V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result, valueSelector)\n}\n\n/**\n * Returns a
[Map] where keys are elements
from the given array and values are\n * produced by the [valueSelector] function applied to each element.\n * \n * If
any two elements are equal, the last one gets added to the map.\n * \n * The returned map preserves the entry
iteration order of the original array.\n * \n * @sample
samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
ULongArray.associateWith(valueSelector: (ULong) -> V): Map<ULong, V> {\n val result =
LinkedHashMap<ULong, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n *
produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one
gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample
samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UByteArray.associateWith(valueSelector: (UByte) -> V): Map<UByte, V> {\n val result =
LinkedHashMap<UByte, V>(mapCapacity(size).coerceAtLeast(16))\n return associateWithTo(result,
valueSelector)\n}\n\n/**\n * Returns a [Map] where keys are elements from the given array and values are\n *
produced by the [valueSelector] function applied to each element.\n * \n * If any two elements are equal, the last one
gets added to the map.\n * \n * The returned map preserves the entry iteration order of the original array.\n * \n *
@sample samples.collections.Collections.Transformations.associateWith\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V>
UShortArray.associateWith(valueSelector: (UShort) -> V): Map<UShort, V> {\n val result =
LinkedHashMap<UShort, V>(mapCapacity(size).coerceAtLeast(16))\n
 return associateWithTo(result, valueSelector)\n}\n\n/**\n * Populates and returns the [destination] mutable map
with key-value pairs for each element of the given array,\n * where key is the element itself and value is provided by
the [valueSelector] function applied to that key.\n * \n * If any two elements are equal, the last one overwrites the
former value in the map.\n * \n * @sample samples.collections.Collections.Transformations.associateWithTo\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V, M >
MutableMap<in UInt, in V>> UIntArray.associateWithTo(destination: M, valueSelector: (UInt) -> V): M {\n for
(element in this) {\n destination.put(element, valueSelector(element))\n }\n return destination\n}\n\n/**\n *
Populates and returns the [destination] mutable map with key-value pairs for each element of the given array,\n *
where key is the element itself and value is provided

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.flatMapIndexed(transform: (index: Int, ULong) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>()),
 transform)\n}\n\n**\n * Returns a single list of all elements yielded from results of [transform] function being
invoked on each element\n * and its index in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.flatMapIndexed(transform: (index: Int, UByte) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Returns a single list of all elements yielded from
results of [transform] function being invoked on each element\n * and its index in the original array.\n * \n *
@sample samples.collections.Collections.Transformations.flatMapIndexed\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.flatMapIndexed(transform: (index: Int, UShort) -> Iterable<R>): List<R> {\n return
flatMapIndexedTo(ArrayList<R>(), transform)\n}\n\n**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.flatMapIndexedTo(destination: C, transform: (index: Int, UInt) ->
Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++, element)\n
destination.addAll(list)\n }\n return destination\n}\n\n**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and
its index in the original array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapIndexedTo(destination: C, transform: (index: Int, ULong) ->
Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++, element)\n
destination.addAll(list)\n }\n return destination\n}\n\n**\n * Appends all elements yielded from results of
[transform] function being invoked on each element\n * and its index in the original array, to the given
[destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UByteArray.flatMapIndexedTo(destination:
C, transform: (index: Int, UByte) -> Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list =
transform(index++, element)\n destination.addAll(list)\n }\n return destination\n}\n\n**\n * Appends all
elements yielded from results of [transform] function being invoked on each element\n * and its index in the original
array, to the given [destination].\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UShortArray.flatMapIndexedTo(destination: C, transform: (index: Int, UShort) ->
Iterable<R>): C {\n var index = 0\n for (element in this) {\n val list = transform(index++, element)\n
destination.addAll(list)\n }\n return destination\n}\n\n**\n * Appends all elements yielded from results of
[transform] function being invoked
on each element of original array, to the given [destination].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :

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MutableCollection<in R>> UIntArray.flatMapTo(destination: C, transform: (UInt) -> Iterable<R>): C {
 for (element in this) {
 val list = transform(element)
 destination.addAll(list)
 }
 return destination
}
/** Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].

*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R, C :
MutableCollection<in R>> ULongArray.flatMapTo(destination: C, transform: (ULong) -> Iterable<R>): C {
 for (element in this) {
 val list = transform(element)
 destination.addAll(list)
 }
 return destination
}
/** Appends all elements yielded from results of [transform] function being
invoked on each element of original array, to the given [destination].

*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R, C :
MutableCollection<in R>> UByteArray.flatMapTo(destination: C, transform: (UByte) -> Iterable<R>): C {
 for (element in this) {
 val list = transform(element)
 destination.addAll(list)
 }
 return destination
}
/** Appends all elements yielded from results of [transform] function being invoked on each
element of original array, to the given [destination].

*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R, C :
MutableCollection<in R>> UShortArray.flatMapTo(destination: C, transform: (UShort) -> Iterable<R>): C {
 for (element in this) {
 val list = transform(element)
 destination.addAll(list)
 }
 return destination
}
/** Groups elements of the original array by the key returned by
the given [keySelector] function
* applied to each element and returns a map where each group key is associated
with a list of corresponding elements.
* The returned map preserves the entry iteration order of the keys
produced from the original array.
* @sample samples.collections.Collections.Transformations.groupBy
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <K>
UIntArray.groupBy(keySelector: (UInt) -> K): Map<K, List<UInt>> {
 return groupByTo(LinkedHashMap<K,
MutableList<UInt>>(), keySelector)
}
/** Groups elements of the original array by the key returned by the
given [keySelector] function
* applied to each element and returns a map where each group key is associated with
a list of corresponding elements.
* The returned map preserves the entry iteration order of the keys produced
from the original array.
* @sample samples.collections.Collections.Transformations.groupBy
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <K>
ULongArray.groupBy(keySelector: (ULong) -> K): Map<K, List<ULong>> {
 return groupByTo(LinkedHashMap<K, MutableList<ULong>>(), keySelector)
}
/** Groups elements of the
original array by the key returned by the given [keySelector] function
* applied to each element and returns a map
where each group key is associated with a list of corresponding elements.
* The returned map preserves the
entry iteration order of the keys produced from the original array.
* @sample
samples.collections.Collections.Transformations.groupBy
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <K>
UByteArray.groupBy(keySelector: (UByte) -> K): Map<K, List<UByte>> {
 return groupByTo(LinkedHashMap<K, MutableList<UByte>>(), keySelector)
}
/** Groups elements of the
original array by the key returned by the given [keySelector]
function
* applied to each element and returns a map where each group key is associated with a list of
corresponding elements.
* The returned map preserves the entry iteration order of the keys produced from the
original array.
* @sample samples.collections.Collections.Transformations.groupBy
*/
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <K>
UShortArray.groupBy(keySelector: (UShort) -> K): Map<K, List<UShort>> {
 return groupByTo(LinkedHashMap<K, MutableList<UShort>>(), keySelector)
}
/** Groups values returned by
the [valueTransform] function applied to each element of the original array
* by the key returned by the given
[keySelector] function applied to the element
* and returns a map where each group key is associated with a list of
corresponding values.
* The returned map preserves the entry iteration order of the keys produced from the
original array.
* @sample samples.collections.Collections.Transformations.groupByKeysAndValues

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of the original array by the key returned by the given [keySelector] function\n \* applied to each element and puts to the [destination] map each group key associated with a list of corresponding elements.\n \* \n \* @return The [destination] map.\n \* \n \* @sample samples.collections.Collections.Transformations.groupBy\n \* \n \* @SinceKotlin("1.3")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <K, M : MutableMap<in K, MutableList<UShort>>> UShortArray.groupByTo(destination: M, keySelector: (UShort) -> K): M {\n \* for (element in this) {\n \* val key = keySelector(element)\n \* val list = destination.getOrPut(key) { ArrayList<UShort>() }\n \* list.add(element)\n \* }\n \* return destination\n \* }\n \* \n \* Groups values returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and puts to the [destination] map each group key associated with a list of corresponding values.\n \* \n \* @return The [destination] map.\n \* \n \* @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n \* \n \* @SinceKotlin("1.3")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> UIntArray.groupByTo(destination: M, keySelector: (UInt) -> K, valueTransform: (UInt) -> V): M {\n \* for (element in this) {\n \* val key = keySelector(element)\n \* val list = destination.getOrPut(key) { ArrayList<V>() }\n \* list.add(valueTransform(element))\n \* }\n \* return destination\n \* }\n \* \n \* Groups values returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and puts to the [destination] map each group key associated with a list of corresponding values.\n \* \n \* @return The [destination] map.\n \* \n \* @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n \* \n \* @SinceKotlin("1.3")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> ULongArray.groupByTo(destination: M, keySelector: (ULong) -> K, valueTransform: (ULong) -> V): M {\n \* for (element in this) {\n \* val key = keySelector(element)\n \* val list = destination.getOrPut(key) { ArrayList<V>() }\n \* list.add(valueTransform(element))\n \* }\n \* return destination\n \* }\n \* \n \* Groups values returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and puts to the [destination] map each group key associated with a list of corresponding values.\n \* \n \* @return The [destination] map.\n \* \n \* @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n \* \n \* @SinceKotlin("1.3")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> UByteArray.groupByTo(destination: M, keySelector: (UByte) -> K, valueTransform: (UByte) -> V): M {\n \* for (element in this) {\n \* val key = keySelector(element)\n \* val list = destination.getOrPut(key) { ArrayList<V>() }\n \* list.add(valueTransform(element))\n \* }\n \* return destination\n \* }\n \* \n \* Groups values returned by the [valueTransform] function applied to each element of the original array\n \* by the key returned by the given [keySelector] function applied to the element\n \* and puts to the [destination] map each group key associated with a list of corresponding values.\n \* \n \* @return The [destination] map.\n \* \n \* @sample samples.collections.Collections.Transformations.groupByKeysAndValues\n \* \n \* @SinceKotlin("1.3")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <K, V, M : MutableMap<in K, MutableList<V>>> UShortArray.groupByTo(destination: M, keySelector: (UShort) -> K, valueTransform: (UShort) -> V): M {\n \* for (element in this) {\n \* val key = keySelector(element)\n \* val list = destination.getOrPut(key) { ArrayList<V>() }\n \* list.add(valueTransform(element))\n \* }\n \* return destination\n \* }\n \* \n \* Returns a list containing the results of applying the given [transform] function\n \* to each element in the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.map\n \* \n \* @SinceKotlin("1.3")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R> UIntArray.map(transform: (UInt) -> R): List<R> {\n \* return mapTo(ArrayList<R>(size), transform)\n \* }\n \* \n \* Returns a list containing the results of applying the given [transform] function\n \* to each element in the original array.\n \* \n \* @sample samples.collections.Collections.Transformations.map\n \* \n \* @SinceKotlin("1.3")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R>

```

UByteArray.map(transform:
(UByte) -> R): List<R> {\n return mapTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing
the results of applying the given [transform] function\n * to each element in the original array.\n * \n * @sample
samples.collections.Collections.Transformations.map\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.map(transform: (UByte) -> R): List<R> {\n return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element in the original array.\n * \n * @sample samples.collections.Collections.Transformations.map\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.map(transform: (UShort) -> R): List<R> {\n return mapTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given
[transform] function\n * to each element and its index in the original array.\n * @param [transform] function that
takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> UIntArray.mapIndexed(transform: (index: Int, UInt) -> R): List<R> {\n return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> ULongArray.mapIndexed(transform: (index: Int, ULong) -> R): List<R> {\n return
mapIndexedTo(ArrayList<R>(size),
transform)\n}\n\n/**\n * Returns a list containing the results of applying the given [transform] function\n * to each
element and its index in the original array.\n * @param [transform] function that takes the index of an element and
the element itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.mapIndexed(transform: (index: Int, UByte) -> R): List<R> {\n return
mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n * Returns a list containing the results of applying the
given [transform] function\n * to each element and its index in the original array.\n * @param [transform] function
that takes the index of an element and the element itself\n * and returns the result of the transform applied to the
element.\n */\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> UShortArray.mapIndexed(transform:
(index: Int, UShort) -> R): List<R> {\n return mapIndexedTo(ArrayList<R>(size), transform)\n}\n\n/**\n *
Applies the given [transform] function to each element and its index in the original array\n * and appends the results
to the given [destination].\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> UIntArray.mapIndexedTo(destination: C, transform: (index: Int, UInt) -> R): C {\n var
index = 0\n for (item in this)\n destination.add(transform(index++, item))\n return destination\n}\n\n/**\n *
Applies the given [transform] function to each element and its index in the original array\n * and appends the results
to the given [destination].\n * @param [transform] function that takes the index of an element and the element
itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :
MutableCollection<in R>> ULongArray.mapIndexedTo(destination: C, transform: (index: Int, ULong) -> R): C {\n var
index = 0\n for (item in this)\n destination.add(transform(index++, item))\n return
destination\n}\n\n/**\n * Applies the given [transform] function to each element and its index in the original array\n
* and appends the results to the given [destination].\n * @param [transform] function that takes the index of an
element and the element itself\n * and returns the result of the transform applied to the element.\n
*/\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, C :

```

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MutableCollection<in R>> UByteArray.mapIndexedTo(destination: C, transform: (index: Int, UByte) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

* Applies the given [transform] function to each element and its index in the original array
* and appends the results to the given [destination].
@param [transform] function that takes the index of an element and the element itself
* and returns the result of the transform applied to the element.

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly
public inline fun <R, C : MutableCollection<in R>> UShortArray.mapIndexedTo(destination: C, transform: (index: Int, UShort) -> R): C {
 var index = 0
 for (item in this)
 destination.add(transform(index++, item))
 return destination
}

* Applies the given [transform] function to each element of the original array
* and appends the results to the given [destination].

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly
public inline fun <R, C : MutableCollection<in R>> UIntArray.mapTo(destination: C, transform: (UInt) -> R): C {
 for (item in this)
 destination.add(transform(item))
 return destination
}

* Applies the given [transform] function to each element of the original array
* and appends the results to the given [destination].

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly
public inline fun <R, C : MutableCollection<in R>> ULongArray.mapTo(destination: C, transform: (ULong) -> R): C {
 for (item in this)
 destination.add(transform(item))
 return destination
}

* Applies the given [transform] function to each element of the original array
* and appends the results to the given [destination].

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly
public inline fun <R, C : MutableCollection<in R>> UByteArray.mapTo(destination: C, transform: (UByte) -> R): C {
 for (item in this)
 destination.add(transform(item))
 return destination
}

* Applies the given [transform] function to each element of the original array
* and appends the results to the given [destination].

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly
public inline fun <R, C : MutableCollection<in R>> UShortArray.mapTo(destination: C, transform: (UShort) -> R): C {
 for (item in this)
 destination.add(transform(item))
 return destination
}

* Returns a lazy [Iterable] that wraps each element of the original array
* into an [IndexedValue] containing the index of that element and the element itself.

* Since Kotlin("1.3") ExperimentalUnsignedTypes
public fun UIntArray.withIndex(): Iterable<IndexedValue<UInt>> {
 return IndexingIterable { iterator() }
}

* Returns a lazy [Iterable] that wraps each element of the original array
* into an [IndexedValue] containing the index of that element and the element itself.

* Since Kotlin("1.3") ExperimentalUnsignedTypes
public fun ULongArray.withIndex(): Iterable<IndexedValue<ULong>> {
 return IndexingIterable { iterator() }
}

* Returns a lazy [Iterable] that wraps each element of the original array
* into an [IndexedValue] containing the index of that element and the element itself.

* Since Kotlin("1.3") ExperimentalUnsignedTypes
public fun UByteArray.withIndex(): Iterable<IndexedValue<UByte>> {
 return IndexingIterable { iterator() }
}

* Returns a lazy [Iterable] that wraps each element of the original array
* into an [IndexedValue] containing the index of that element and the element itself.

* Since Kotlin("1.3") ExperimentalUnsignedTypes
public fun UShortArray.withIndex(): Iterable<IndexedValue<UShort>> {
 return IndexingIterable { iterator() }
}

* Returns `true` if all elements match the given [predicate].
* Note that if the array contains no elements, the function returns `true`
* because there are no elements in it that _do not_ match the predicate.
* See a more detailed explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.
* @sample samples.collections.Collections.Aggregates.all

* Since Kotlin("1.3") ExperimentalUnsignedTypes @kotlin.internal.InlineOnly
public inline fun UIntArray.all(predicate: (UInt) -> Boolean): Boolean {
 for (element in this) if (!predicate(element)) return

```

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false\n return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the
array contains no elements, the function returns `true`\n * because there are no elements in it that _do not_ match the
predicate.\n * See a more detailed explanation of this logic concept in ["Vacuous
truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.all(predicate: (ULong) -> Boolean): Boolean {\n for (element in this) if
(!predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if all elements match the given
[predicate].\n * \n * Note that if the array contains no elements, the function returns `true`\n * because there are no
elements in it that _do not_ match the predicate.\n * See a more detailed explanation of this logic concept in
["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n * @sample
samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.all(predicate: (UByte) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if all elements match the given [predicate].\n * \n * Note that if the
array contains no elements, the function
returns `true`\n * because there are no elements in it that _do not_ match the predicate.\n * See a more detailed
explanation of this logic concept in ["Vacuous truth"](https://en.wikipedia.org/wiki/Vacuous_truth) article.\n * \n *
@sample samples.collections.Collections.Aggregates.all\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.all(predicate: (UShort) -> Boolean): Boolean {\n for (element in this) if (!predicate(element)) return
false\n return true\n}\n\n/**\n * Returns `true` if array has at least one element.\n * \n * @sample
samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.any(): Boolean {\n return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one element.\n
*\n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.any(): Boolean {\n return storage.any()\n}\n\n/**\n * Returns `true` if array has at least
one element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.any(): Boolean {\n return storage.any()\n}\n\n/**\n * Returns `true` if array has at least one
element.\n * \n * @sample samples.collections.Collections.Aggregates.any\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.any(): Boolean {\n return storage.any()\n}\n\n/**\n * Returns `true` if at least one element matches
the given [predicate].\n * \n * @sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.any(predicate: (UInt) -> Boolean): Boolean {\n
 for (element in this) if (predicate(element)) return true\n return false\n}\n\n/**\n * Returns `true` if at least one
element matches the given [predicate].\n * \n * @sample
samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.any(predicate: (ULong) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.any(predicate: (UByte) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns `true` if at least one element matches the given [predicate].\n * \n *
@sample samples.collections.Collections.Aggregates.anyWithPredicate\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.any(predicate: (UShort) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return
true\n return false\n}\n\n/**\n * Returns the number of elements matching the given [predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.count(predicate: (UInt) -> Boolean): Int {\n var count = 0\n for (element in this) if
(predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.count(predicate: (ULong) -> Boolean): Int {\n var count = 0\n for (element in this) if
(predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the number of elements
matching the given [predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.count(predicate: (UByte) -> Boolean): Int {\n var count = 0\n for (element in this) if
(predicate(element)) ++count\n return count\n}\n\n/**\n * Returns the number of elements matching the given
[predicate].\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UShortArray.count(predicate: (UShort) -> Boolean): Int {\n var count = 0\n for (element in this) if
(predicate(element)) ++count\n return count\n}\n\n/**\n * Accumulates value starting with [initial] value and
applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator
value and an element, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UIntArray.fold(initial: R, operation: (acc: R, UInt) -> R): R {\n var accumulator = initial\n for
(element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates
value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and
each element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.fold(initial: R, operation: (acc: R, ULong) -> R): R {\n var accumulator = initial\n for (element in
this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value
and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes current accumulator
value and an element, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.fold(initial: R, operation: (acc: R, UByte) -> R): R {\n var accumulator = initial\n for (element in
this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value
starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function
that takes current accumulator value and an element, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UShortArray.fold(initial: R, operation: (acc: R, UShort) -> R): R {\n var accumulator = initial\n
for (element in this) accumulator = operation(accumulator, element)\n return accumulator\n}\n\n/**\n *
Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator
value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the
array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n *
and the element itself, and calculates the next accumulator value.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): R {\n var index = 0\n var
accumulator = initial\n for (element in this) accumulator = operation(index++,

```

accumulator, element)\n return accumulator\n}\n\n/\*\*\n \* Accumulates value starting with [initial] value and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nULongArray.foldIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n
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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUByteArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from left to right\n * to current accumulator value and each element with its index in the original array.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUShortArray.foldIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): R {\n var index = 0\n var accumulator = initial\n for (element in this) accumulator = operation(index++, accumulator, element)\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUIntArray.foldRight(initial: R, operation: (UInt, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nULongArray.foldRight(initial: R, operation: (ULong, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>\nUByteArray.foldRight(initial: R, operation: (UByte, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n * Returns the specified [initial] value if the array is
```

empty.\n \* \n \* @param [operation] function that takes an element and current accumulator value, and calculates the next accumulator value.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
fun <R> UShortArray.foldRight(initial: R, operation: (UShort, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial] value and applying [operation] from right
to left\n * to each element with its index in the original array and current accumulator value.\n * \n * Returns the
specified [initial] value if the array is empty.\n * \n * @param [operation] function that takes the index of an
element, the element itself\n * and current accumulator value, and calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.foldRightIndexed(initial: R, operation: (index: Int, UInt, acc: R) -> R): R {\n var index = lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index,
get(index), accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
[initial] value and applying [operation] from right to left\n * to each element with its index in the original array and
current accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n * \n * @param
[operation] function that takes the index of an element, the element itself\n * and current accumulator value, and
calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.foldRightIndexed(initial: R, operation: (index: Int, ULong, acc: R) -> R): R {\n var index =
lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
value and applying [operation]
```

from right to left\n \* to each element with its index in the original array and current accumulator value.\n \* \n \* Returns the specified [initial] value if the array is empty.\n \* \n \* @param [operation] function that takes the index  
of an element, the element itself\n \* and current accumulator value, and calculates the next accumulator value.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.foldRightIndexed(initial: R, operation: (index: Int, UByte, acc: R) -> R): R {\n var index =
lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with [initial]
value and applying [operation] from right to left\n * to each element with its index in the original array and current
accumulator value.\n * \n * Returns the specified [initial] value if the array is empty.\n
```

\* \n \* @param [operation] function that takes the index of an element, the element itself\n \* and current  
accumulator value, and calculates the next accumulator value.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.foldRightIndexed(initial: R, operation: (index: Int, UShort, acc: R) -> R): R {\n var index =
lastIndex\n var accumulator = initial\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Performs the given [action] on each
element.\n * \n * @param [action] function that takes the index of an element, the element itself\n * and current
accumulator value, and calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.forEach(action:
(ULong) -> Unit): Unit {\n for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each
element.\n * \n * @param [action] function that takes the index of an element, the element itself\n * and current
accumulator value, and calculates the next accumulator value.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.forEach(action: (UShort) -> Unit): Unit {\n for (element in this) action(element)\n}\n\n/**\n * Performs the given [action] on each
element.\n * \n * @param [action] function that takes the index of an element, the element itself\n * and current
accumulator value, and calculates the next accumulator value.\n
```



Performs the given [action] on each element, providing sequential index with the element.\n \* @param [action] function that takes the index of an element and the element itself\n \* and performs the action on the element.\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.forEachIndexed(action: (index: Int, UInt) -> Unit):
Unit {\n var index = 0\n for (item in this) action(index++, item)\n}\n\n/**\n * Performs the given [action] on
each element, providing sequential index with the element.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.forEachIndexed(action: (index: Int, ULong) -> Unit): Unit {\n var index = 0\n for (item in this)
action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index with
the element.\n * @param [action] function that takes the index of an element and the element itself\n * and performs
the action on the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.forEachIndexed(action: (index: Int, UByte) -> Unit): Unit {\n var index = 0\n for (item in
this) action(index++, item)\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element.\n * @param [action] function that takes the index of an element and the element itself\n * and
performs the action on the element.\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.forEachIndexed(action: (index: Int, UShort) -> Unit): Unit {\n var index = 0\n for (item in this)
action(index++, item)\n}\n\n/**\n * Returns the largest element.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @since Kotlin("1.7")\n * \n * @kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.max(): UInt {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns
the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
* \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.max(): ULong {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i
in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns
the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.max(): UByte {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns
the largest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
```

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic
fun UShortArray.max(): UShort {\n if (isEmpty()) throw NoSuchElementException()\n var max = this[0]\n for
(i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max = e\n }\n return max\n}\n\n/**\n * Returns
the first element yielding the largest value of the given function.\n * \n * @throws NoSuchElementException if the
array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.maxBy\n
```

```
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> UIntArray.maxBy(selector: (UInt) -> R): UInt {\n if (isEmpty())
throw NoSuchElementException()\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex ==
0) return maxElem\n var maxValue = selector(maxElem)\n
```



```

selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)\n {\n maxElem = e\n maxValue = v\n }\n } return maxElem\n}\n\n/**\n * Returns the first element yielding the largest value of the given function or `null` if there are no elements.\n *\n * @sample\n samples.collections.Collections.Aggregates.maxByOrNull\n\n*\n*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> UShortArray.maxByOrNull(selector: (UShort) -> R): UShort? {\n if (isEmpty()) return null\n var maxElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return maxElem\n var maxValue = selector(maxElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (maxValue < v)\n {\n maxElem = e\n maxValue = v\n }\n }\n return maxElem\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * @throws NoSuchElementException if the array is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.maxOf(selector: (UInt) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * @throws NoSuchElementException if the array is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.maxOf(selector: (ULong) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * @throws NoSuchElementException if the array is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.maxOf(selector: (UByte) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * @throws NoSuchElementException if the array is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.maxOf(selector: (UShort) -> Double): Double {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the array.\n *\n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n *\n * @throws NoSuchElementException if the array is empty.\n\n*\n*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolutionByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.maxOf(selector: (UInt) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =

```

```

maxOf(maxValue, v)\n } return maxValue\n}\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n * \n * \n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOf(selector: (ULong) -> Float): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return maxValue\n}\n}\n/**\n * Returns the
largest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*\n * \n * \n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOf(selector: (UByte)
-> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var maxValue = selector(this[0])\n for
(i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n }\n return
maxValue\n}\n}\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is
`NaN`.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n * \n * \n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOf(selector: (UShort) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n}\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n * \n * \n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UIntArray.maxOf(selector: (UInt) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n}\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n * \n * \n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.maxOf(selector: (ULong) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n}\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n * \n * \n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.maxOf(selector: (UByte) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n}\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n * \n * \n *\n */\n\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution

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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UShortArray.maxOf(selector: (UShort) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n * applied to each element in the
array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the
returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOfOrNull(selector: (UInt) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
 }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOfOrNull(selector: (ULong) -> Double): Double? {\n if (isEmpty()) return null\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOfOrNull(selector: (UByte) -> Double): Double? {\n if (isEmpty()) return null\n var maxValue
= selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
 }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOfOrNull(selector: (UShort) -> Double): Double? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.maxOfOrNull(selector: (UInt) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
 }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.maxOfOrNull(selector: (ULong) -> Float): Float? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue =
maxOf(maxValue, v)\n }\n return maxValue\n}\n\n/**\n * Returns the largest value among all values produced
by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

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values produced by [selector] function is `NaN`, the returned result is `NaN`.\n

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.maxOfOrNull(selector: (UByte) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
}\n return
maxValue\n}\n\n**\n * Returns the largest value among all values produced by [selector] function\n * applied to
each element in the array or `null` if there are no elements.\n * \n * If any of values produced by [selector] function
is `NaN`, the returned result is `NaN`.\n

```

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*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.maxOfOrNull(selector: (UShort) -> Float): Float? {\n if (isEmpty()) return null\n var maxValue =
selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n maxValue = maxOf(maxValue, v)\n
}\n return maxValue\n}\n\n**\n * Returns the largest value among all values produced by [selector] function\n *
applied to each element in the array or `null` if there are no elements.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> UIntArray.maxOfOrNull(selector: (UInt) -> R): R? {\n if (isEmpty()) return
null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n**\n * Returns the largest value
among all values produced by [selector] function\n * applied to each element in the array or `null` if there are no
elements.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> ULongArray.maxOfOrNull(selector: (ULong) -> R): R? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n**\n * Returns the largest
value among all values produced by [selector] function\n * applied to each element in the array or `null` if there are
no elements.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R :
Comparable<R>> UByteArray.maxOfOrNull(selector: (UByte) -> R): R? {\n if (isEmpty()) return null\n var
maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n**\n * Returns the largest value among all values
produced by [selector] function\n * applied to each element in the array or `null` if there are no elements.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R : Comparable<R>> UShortArray.maxOfOrNull(selector: (UShort) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(maxValue < v) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n**\n * Returns the largest value
according to the provided [comparator]\n * among all values produced by [selector] function applied to each
element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n

```

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.maxOfWith(comparator: Comparator<in R>, selector: (UInt) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n
var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(maxValue, v) < 0) {\n maxValue = v\n }\n }\n return maxValue\n}\n\n**\n *

```

Returns the largest value according to the provided [comparator] \* among all values produced by [selector] function applied to each element in the array. \* @throws NoSuchElementException if the array is empty.

```

*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.maxOfWith(comparator: Comparator<in R>, selector: (ULong) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n
}\n }\n return maxValue\n}\n\n**\n * Returns the largest value according to the provided [comparator] *
among all values produced by [selector] function applied to each element in the array. * @throws
NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.maxOfWith(comparator: Comparator<in R>, selector: (UByte) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n
}\n }\n return
maxValue\n}\n\n**\n * Returns the largest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array. * \n
* @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UShortArray.maxOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n
}\n }\n return
maxValue\n}\n\n**\n * Returns the largest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R> UIntArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UInt) -> R): R? {\n if
(isEmpty()) return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n
}\n }\n return
maxValue\n}\n\n**\n * Returns the largest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
ULongArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n
if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n
}\n }\n return
maxValue\n}\n\n**\n * Returns the largest value according to the provided [comparator] * among all values
produced by [selector] function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UByteArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UByte) -> R): R? {\n if (isEmpty())
return null\n var maxValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n
if (comparator.compare(maxValue, v) < 0) {\n maxValue = v\n
}\n }\n return maxValue\n}\n\n**\n * Returns the largest value according to the provided [comparator] * among all values produced by [selector]
function applied to each element in the array or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>

```

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UShortArray.maxOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {\n if (isEmpty())
return null\n var max = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n if
(comparator.compare(max, v) < 0) {\n max = v\n }\n }\n return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxOrNull(): UInt? {\n if
(isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max
= e\n }\n return max\n}\n\n/**\n * Returns
the largest element or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun ULongArray.maxOrNull(): ULong? {\n if
(isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max
= e\n }\n return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.maxOrNull(): UByte? {\n if
(isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max
= e\n }\n return max\n}\n\n/**\n * Returns the largest element or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.maxOrNull(): UShort? {\n if
(isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (max < e) max
= e\n }\n return
max\n}\n\n/**\n * Returns the first element having the largest value according to the provided [comparator].\n * \n
* @throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.maxWith(comparator: Comparator<in UInt>): UInt {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.maxWith(comparator: Comparator<in ULong>): ULong {\n if (isEmpty()) throw
NoSuchElementException()\n
 var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max
= e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.maxWith(comparator: Comparator<in UByte>): UByte {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is
empty.\n * \n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("maxWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic
fun UShortArray.maxWith(comparator: Comparator<in UShort>): UShort {\n if (isEmpty()) throw
NoSuchElementException()\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the first element having the
largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UIntArray.maxWithOrNull(comparator:
Comparator<in UInt>): UInt? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
 val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n

```



```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic
fun ULongArray.maxWithOrNull(comparator: Comparator<in ULong>): ULong? {\n if (isEmpty()) return null\n
var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(max, e) < 0) max =
e\n }\n return max\n}\n\n/**\n * Returns the first element having the largest value according to the provided
[comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UByteArray.maxWithOrNull(comparator:
Comparator<in UByte>): UByte? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n
val e = this[i]\n if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the
first element having the largest value according to the provided [comparator] or `null` if there are no elements.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.maxWithOrNull(comparator:
Comparator<in UShort>):
UShort? {\n if (isEmpty()) return null\n var max = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n
if (comparator.compare(max, e) < 0) max = e\n }\n return max\n}\n\n/**\n * Returns the smallest element.\n * \n
* @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UIntArray.min(): UInt {\n if (isEmpty()) throw NoSuchElementException()\n var min = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.min(): ULong {\n if (isEmpty()) throw NoSuchElementException()\n var
min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return
min\n}\n\n/**\n * Returns the smallest element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.min(): UByte {\n if (isEmpty()) throw NoSuchElementException()\n var min = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest
element.\n * \n * @throws NoSuchElementException if the array is empty.\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UShortArray.min(): UShort {\n if (isEmpty()) throw NoSuchElementException()\n var min = this[0]\n for (i in
1..lastIndex) {\n val e = this[i]\n
if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the first element yielding the smallest value of
the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> UIntArray.minBy(selector: (UInt) -> R): UInt {\n if (isEmpty())
throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex ==
0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val
v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return
minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n
* \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample
samples.collections.Collections.Aggregates.minBy\n
*\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-
U")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS
")\npublic inline fun <R : Comparable<R>> ULongArray.minBy(selector: (ULong) -> R): ULong {\n if

```

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(isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> UByteArray.minBy(selector: (UByte) -> R): UByte {\n if (isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function.\n * \n * @throws NoSuchElementException if the array is empty.\n * \n * @sample samples.collections.Collections.Aggregates.minBy\n */\n\n@SinceKotlin("1.7")\n@kotlin.jvm.JvmName("minByOrThrow-")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\n@Suppress("CONFLICTING_OVERLOADS")\npublic inline fun <R : Comparable<R>> UShortArray.minBy(selector: (UShort) -> R): UShort {\n if (isEmpty()) throw NoSuchElementException()\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> UIntArray.minByOrNull(selector: (UInt) -> R): UInt? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> ULongArray.minByOrNull(selector: (ULong) -> R): ULong? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> UByteArray.minByOrNull(selector: (UByte) -> R): UByte? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if (minValue > v) {\n minElem = e\n minValue = v\n }\n }\n return minElem\n}\n\n/**\n * Returns the first element yielding the smallest value of the given function or `null` if there are no elements.\n * \n * @sample samples.collections.Collections.Aggregates.minByOrNull\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R : Comparable<R>> UShortArray.minByOrNull(selector: (UShort) -> R): UShort? {\n if (isEmpty()) return null\n var minElem = this[0]\n val lastIndex = this.lastIndex\n if (lastIndex == 0) return minElem\n}

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var minValue = selector(minElem)\n for (i in 1..lastIndex) {\n val e = this[i]\n val v = selector(e)\n if
(minValue > v) {\n minElem = e\n minValue = v\n }\n } return minElem\n}\n\n/**\n *
Returns the smallest value among all values produced by [selector] function\n * applied to each element in the
array.\n * \n * If any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n *
@throws NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.minOf(selector: (UInt) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If any of
values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.minOf(selector: (ULong) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val
v = selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the
smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * If
any of values produced by [selector] function is `NaN`, the returned result is `NaN`.\n * \n * @throws
NoSuchElementException if the array is empty.\n
*/\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.minOf(selector: (UByte) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest
value among all values produced
by [selector] function\n * applied to each element in the array.\n * \n * If any of values produced by [selector]
function is `NaN`, the returned result is `NaN`.\n * \n * @throws
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UShortArray.minOf(selector: (UShort) -> Double): Double {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
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ByLambdaReturnType\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun UIntArray.minOf(selector: (UInt) -> Float): Float {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n minValue = minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest
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ULongArray.minOf(selector: (ULong) -> Float): Float {\n if (isEmpty()) throw
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 var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
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ByLambdaReturnType\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline fun
ByteArray.minOf(selector: (UByte) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest
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UShortArray.minOf(selector: (UShort) -> Float): Float {\n if (isEmpty()) throw NoSuchElementException()\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =
minOf(minValue, v)\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced
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<R : Comparable<R>> UIntArray.minOf(selector: (UInt) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
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ByLambdaReturnType\n * @ExperimentalUnsignedTypes\n * @kotlin.internal.InlineOnly\n * public inline fun <R :
Comparable<R>> ULongArray.minOf(selector: (ULong) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array.\n * \n * @throws NoSuchElementException if the array is empty.\n
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Comparable<R>> UShortArray.minOf(selector: (UShort) -> R): R {\n if (isEmpty()) throw
NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (minValue > v) {\n minValue = v\n }\n }\n return minValue\n}\n\n/**\n * Returns the smallest value among all values produced by [selector] function\n * applied to each element in the array
or `null` if there are no elements.\n * \n * If any of values produced by [selector] function is `NaN`, the\n * returned
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inline fun UIntArray.minOrNull(selector: (UInt) -> Double): Double? {\n if (isEmpty()) return null\n var
minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n minValue =
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minValue = v\/n }\/n }\/n return minValue\/n}\/n\/n**\/n * Returns the smallest value according to the provided
[comparator]\/n * among all values produced by [selector] function applied to each element in the array.\/n *\/n *
@throws NoSuchElementException if the array is empty.\/n
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UIntArray.minOfWith(comparator: Comparator<in R>, selector: (UInt) -> R): R {\/n if (isEmpty()) throw
NoSuchElementException()\/n var minValue = selector(this[0])\/n for (i in 1..lastIndex) {\/n val v =
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ULongArray.minOfWith(comparator: Comparator<in R>, selector: (ULong) -> R): R {\/n if (isEmpty()) throw

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NoSuchElementException()\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return
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<R> UShortArray.minOfWith(comparator: Comparator<in R>, selector: (UShort) -> R): R {\n if (isEmpty())
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UIntArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UInt) -> R): R? {\n if (isEmpty()) return
null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n
 if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return
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ULongArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (ULong) -> R): R? {\n if (isEmpty())
return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v = selector(this[i])\n
 if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n return
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inline fun <R> UShortArray.minOfWithOrNull(comparator: Comparator<in R>, selector: (UShort) -> R): R? {\n
 if (isEmpty()) return null\n var minValue = selector(this[0])\n for (i in 1..lastIndex) {\n val v =
selector(this[i])\n if (comparator.compare(minValue, v) > 0) {\n minValue = v\n }\n }\n
 return minValue\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n

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*^@SinceKotlin("1.4")@ExperimentalUnsignedTypes\npublic fun UIntArray.minOrNull(): UInt? {\n if
(isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (min > e) min =
e\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@ExperimentalUnsignedTypes\npublic fun ULongArray.minOrNull(): ULong? {\n if
(isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val
e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null` if
there are no elements.\n
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UByteArray.minOrNull(): UByte? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n
 val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the smallest element or `null`
if there are no elements.\n
*^@SinceKotlin("1.4")@ExperimentalUnsignedTypes\npublic fun
UShortArray.minOrNull(): UShort? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex)
{\n val e = this[i]\n if (min > e) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having
the smallest value according to the provided [comparator].\n * \n * @throws NoSuchElementException if the array
is empty.\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("minWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic
fun UIntArray.minWith(comparator: Comparator<in UInt>): UInt {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
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empty.\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("minWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
ULongArray.minWith(comparator: Comparator<in ULong>): ULong {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
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to the provided [comparator].\n * \n * @throws NoSuchElementException if the array is empty.\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("minWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UByteArray.minWith(comparator: Comparator<in UByte>): UByte {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if
(comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the
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empty.\n
*^@SinceKotlin("1.7")@kotlin.jvm.JvmName("minWithOrThrow-
U")\n@ExperimentalUnsignedTypes\n@Suppress("CONFLICTING_OVERLOADS")\npublic fun
UShortArray.minWith(comparator: Comparator<in UShort>): UShort {\n if (isEmpty()) throw
NoSuchElementException()\n var min = this[0]\n for (i in 1..lastIndex) {\n
 val e = this[i]\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the
first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@ExperimentalUnsignedTypes\npublic fun UIntArray.minWithOrNull(comparator:
Comparator<in UInt>): UInt? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n
 val e = this[i]\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first
element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@ExperimentalUnsignedTypes\npublic fun ULongArray.minWithOrNull(comparator:
Comparator<in ULong>): ULong? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n
 val e = this[i]\n if (comparator.compare(min, e) > 0) min
= e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided
[comparator] or `null` if there are no elements.\n
*^@SinceKotlin("1.4")@ExperimentalUnsignedTypes\npublic fun UByteArray.minWithOrNull(comparator:

```



```

Comparator<in UByte>: UByte? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns the first element having the smallest value according to the provided [comparator] or `null` if there are no elements.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun UShortArray.minWithOrNull(comparator: Comparator<in UShort>): UShort? {\n if (isEmpty()) return null\n var min = this[0]\n for (i in 1..lastIndex) {\n val e = this[i]\n if (comparator.compare(min, e) > 0) min = e\n }\n return min\n}\n\n/**\n * Returns `true` if the array has no elements.\n */\n\n@sample samples.collections.Collections.Aggregates.none\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n */\n\n@sample samples.collections.Collections.Aggregates.none\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n */\n\n@sample samples.collections.Collections.Aggregates.none\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.none(): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if the array has no elements.\n */\n\n@sample samples.collections.Collections.Aggregates.none\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.none(predicate: (UShort) -> Boolean): Boolean {\n return isEmpty()\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n */\n\n@sample samples.collections.Collections.Aggregates.noneWithPredicate\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.none(predicate: (UInt) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n */\n\n@sample samples.collections.Collections.Aggregates.noneWithPredicate\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.none(predicate: (ULong) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n */\n\n@sample samples.collections.Collections.Aggregates.noneWithPredicate\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.none(predicate: (UByte) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return true\n}\n\n/**\n * Returns `true` if no elements match the given [predicate].\n */\n\n@sample samples.collections.Collections.Aggregates.noneWithPredicate\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.none(predicate: (UShort) -> Boolean): Boolean {\n for (element in this) if (predicate(element)) return false\n return true\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.onEach(action: (UInt) -> Unit): UIntArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.onEach(action: (ULong) -> Unit): ULongArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.onEach(action: (UByte) -> Unit): UByteArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on each element and returns the array itself afterwards.\n */\n\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.onEach(action: (UShort) -> Unit): UShortArray {\n return apply { for (element in this) action(element) }\n}\n\n/**\n * Performs the given [action] on each element, providing

```

sequential index with the element,`\n *`  and returns the array itself afterwards.`\n *`  @param [action] function that takes the index of an element and the element itself`\n *`  and performs the action on the element.`\n`

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.onEachIndexed(action: (index: Int, UInt) -> Unit): UIntArray {\n return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.onEachIndexed(action: (index: Int, ULong) -> Unit): ULongArray {\n return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing
sequential index with the element,\n * and returns the array itself afterwards.\n * @param [action] function that
takes the index of an element and the element itself\n * and performs the action on the element.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.onEachIndexed(action: (index: Int, UByte) -> Unit): UByteArray {\n return apply {
forEachIndexed(action) }\n}\n\n/**\n * Performs the given [action] on each element, providing sequential index
with the element,\n * and returns the array itself afterwards.\n * @param [action] function that takes the index of an
element and the element itself\n * and performs the action on the element.\n
```

```
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.onEachIndexed(action: (index: Int, UShort) -> Unit): UShortArray {\n return apply {
forEachIndexed(action) }\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that takes
current accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduce(operation: (acc: UInt, UInt) -> UInt): UInt {\n if (isEmpty())\n throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n *
Accumulates value starting with the first element and applying
[operation] from left to right\n * to current accumulator value and each element.\n * \n * Throws an exception if
this array is empty. If the array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns
`null` when its receiver is empty.\n * \n * @param [operation] function that takes current accumulator value and an
element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduce\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduce(operation: (acc: ULong, ULong) -> ULong): ULong {\n if (isEmpty())\n throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n *
Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element.\n * \n * Throws an exception if this array is empty. If the
array can be empty in an expected way,\n * please use [reduceOrNull] instead. It returns `null` when its receiver is
empty.\n * \n * @param [operation] function that takes current accumulator value and an element,\n * and calculates
the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduce\n
```

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduce(operation: (acc: UByte, UByte) -> UByte): UByte {\n if (isEmpty())\n throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in
1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n *

```

Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator

value and each element.\n \* \n \* Throws an exception if this array is empty. If the array can be empty in an expected way,\n \* please use [reduceOrNull] instead. It returns `null` when its receiver is empty.\n \* \n \* @param [operation] function that takes current accumulator value and an element,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduce\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUShortArray.reduce(operation: (acc: UShort, UShort) -> UShort): UShort {\n if (isEmpty())\n throw\n UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in\n 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n
```

Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each

element with its index in the original array.\n \* \n \* Throws an exception if this array is empty. If the array can be empty in an expected way,\n \* please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduce\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUIntArray.reduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): UInt {\n if (isEmpty())\n throw\n UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for (index in\n 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return\n accumulator\n}\n\n/**\n
```

accumulator\n \* Accumulates value starting with the first element and applying

[operation] from left to right\n \* to current accumulator value and each element with its index in the original

array.\n \* \n \* Throws an exception if this array is empty. If the array can be empty in an expected way,\n \* please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduce\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nULongArray.reduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong {\n if (isEmpty())\n throw\n UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for\n (index in 1..lastIndex) {\n accumulator = operation(index, accumulator, this[index])\n }\n return\n accumulator\n}\n\n/**\n
```

\* Accumulates value starting with the first element and applying [operation] from left to right\n \* to current

accumulator value and each element with its index in the original array.\n \* \n \* Throws an exception if this array is empty. If the array can be empty in an expected way,\n \* please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduce\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.reduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte {\n if (isEmpty())\n throw\n UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for\n (index in 1..lastIndex) {\n accumulator\n
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= operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/\*\*\n

Accumulates value starting with the first element and applying [operation] from left to right\n \* to current accumulator value and each element with its index in the original array.\n \* \n \* Throws an exception if this array is empty. If the array can be empty in an expected way,\n \* please use [reduceIndexedOrNull] instead. It returns `null` when its receiver is empty.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value and the element itself,\n \* and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.reduce\n

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun\nUByteArray.reduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte {\n if (isEmpty())\n throw\n UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = this[0]\n for\n (index in 1..lastIndex) {\n accumulator\n
```

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduceIndexed(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort {\n if (isEmpty())\n throw UnsupportedOperationException("Empty array can't be reduced.")\n \n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index, accumulator,
this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and
applying [operation] from left to right\n * to current accumulator value and each element with its index in the
original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index
of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n
* @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceIndexedOrNull(operation: (index: Int, acc: UInt, UInt) -> UInt): UInt? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator = operation(index,
accumulator,
this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the first element and
applying [operation] from left to right\n * to current accumulator value and each element with its index in the
original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index
of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n
* @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceIndexedOrNull(operation: (index: Int, acc: ULong, ULong) -> ULong): ULong? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element
and applying [operation] from left to right\n * to current accumulator value and each element with its index in the
original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the index
of an element, current accumulator value and the element itself,\n * and calculates the next accumulator value.\n * \n
* @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceIndexedOrNull(operation: (index: Int, acc: UByte, UByte) -> UByte): UByte? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each element
with its index in
the original array.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value and the element itself,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduceIndexedOrNull(operation: (index: Int, acc: UShort, UShort) -> UShort): UShort? {\n if
(isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(index, accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting
with the first element and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current
accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceOrNull(operation: (acc: UInt, UInt) -> UInt): UInt?
{\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n

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accumulator = operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value
starting with the first element and applying [operation] from left to right\n * to current accumulator value and each
element.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current
accumulator value and an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic
inline fun ULongArray.reduceOrNull(operation: (acc: ULong, ULong) -> ULong): ULong? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex) {\n accumulator =
operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the
first element and applying [operation] from left to right\n * to current accumulator value and each element.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes current accumulator value and
an element,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reduceOrNull(operation: (acc:
UByte, UByte) -> UByte): UByte? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for
(index in 1..lastIndex) {\n accumulator = operation(accumulator, this[index])\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the first element and applying [operation] from left to
right\n * to current accumulator value and each element.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes current accumulator value and an element,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceOrNull(operation: (acc: UShort, UShort) ->
UShort): UShort? {\n if (isEmpty())\n return null\n var accumulator = this[0]\n for (index in 1..lastIndex)
{\n accumulator
= operation(accumulator, this[index])\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceRight(operation: (UInt, acc: UInt) -> UInt): UInt {\n var index = lastIndex\n if (index < 0)
throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator
= operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceRight(operation: (ULong, acc: ULong) -> ULong): ULong {\n var index = lastIndex\n if
(index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator =
get(index--)\n while (index >= 0) {\n accumulator
= operation(get(index--), accumulator)\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with
the last element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Throws an exception if this array is empty. If the array can be empty in an expected way,\n * please use
[reduceRightOrNull] instead. It returns `null` when its receiver is empty.\n * \n * @param [operation] function that
takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRight\n

```

\* Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.

`@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceRight

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.reduceRight(operation: (UByte, acc: UByte) -> UByte): UByte {\n var index = lastIndex\n if (index
< 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while (index >= 0) {\n
 accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}
```

\* Accumulates value starting with the last element and applying [operation] from right to left to each element and current accumulator value.

\* Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightOrNull] instead. It returns `null` when its receiver is empty.

\* `@param [operation]` function that takes an element and current accumulator value, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceRight

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.reduceRight(operation: (UShort, acc: UShort) -> UShort): UShort {\n var index = lastIndex\n if
(index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator =
get(index--)\n while (index >= 0) {\n
 accumulator = operation(get(index--), accumulator)\n }\n return accumulator\n}
```

\* Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.

\* Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

\* `@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceRight

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.reduceRightIndexed(operation: (index: Int, UInt, acc: UInt) -> UInt): UInt {\n var index = lastIndex\n if (index < 0) throw UnsupportedOperationException("Empty
array can't be reduced.")\n var accumulator = get(index--)\n while (index >= 0) {\n accumulator =
operation(index, get(index), accumulator)\n --index\n }\n return accumulator\n}
```

\* Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.

\* Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

\* `@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceRight

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.reduceRightIndexed(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong {\n var index = lastIndex\n if (index < 0) throw
UnsupportedOperationException("Empty array can't be reduced.")\n var accumulator = get(index--)\n while
(index >= 0) {\n accumulator = operation(index, get(index), accumulator)\n --index\n }\n return
accumulator\n}
```

\* Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.

\* Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.

\* `@param [operation]` function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.

`@sample` samples.collections.Collections.Aggregates.reduceRight

```
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
```

```

inline fun UByteArray.reduceRightIndexed(operation: (index: Int, UByte, acc: UByte) -> UByte): UByte {
 var index = lastIndex
 if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

/** Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Throws an exception if this array is empty. If the array can be empty in an expected way, please use [reduceRightIndexedOrNull] instead. It returns `null` when its receiver is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduceRight
 */
@SinceKotlin("1.3")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UShortArray.reduceRightIndexed(operation: (index: Int, UShort, acc: UShort) -> UShort): UShort {
 var index = lastIndex
 if (index < 0) throw UnsupportedOperationException("Empty array can't be reduced.")
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

/** Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Returns `null` if the array is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UIntArray.reduceRightIndexedOrNull(operation: (index: Int, UInt, acc: UInt) -> UInt?): UInt? {
 var index = lastIndex
 if (index < 0) return null
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

/** Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Returns `null` if the array is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun ULongArray.reduceRightIndexedOrNull(operation: (index: Int, ULong, acc: ULong) -> ULong): ULong? {
 var index = lastIndex
 if (index < 0) return null
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

/** Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Returns `null` if the array is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun UByteArray.reduceRightIndexedOrNull(operation: (index: Int, UByte, acc: UByte) -> UByte?): UByte? {
 var index = lastIndex
 if (index < 0) return null
 var accumulator = get(index--)
 while (index >= 0) {
 accumulator = operation(index, get(index), accumulator)
 --index
 }
 return accumulator
}

/** Accumulates value starting with the last element and applying [operation] from right to left to each element with its index in the original array and current accumulator value.
 * Returns `null` if the array is empty.
 * @param [operation] function that takes the index of an element, the element itself and current accumulator value, and calculates the next accumulator value.
 * @sample samples.collections.Collections.Aggregates.reduceRightOrNull
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun

```

```

UShortArray.reduceRightIndexedOrNull(operation: (index:
Int, UShort, acc: UShort) -> UShort): UShort? {\n var index = lastIndex\n if (index < 0) return null\n var
accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(index, get(index),
accumulator)\n --index\n }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last
element and applying [operation] from right to left\n * to each element and current accumulator value.\n * \n *
Returns `null` if the array is empty.\n * \n * @param [operation] function that takes an element and current
accumulator value,\n * and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UIntArray.reduceRightOrNull(operation: (UInt, acc: UInt) -> UInt):
UInt? {\n var index = lastIndex\n if (index < 0) return null\n
 var accumulator = get(index--)\n while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n
 }\n return accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation]
from right to left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n *
\n * @param [operation] function that takes an element and current accumulator value,\n * and calculates the next
accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun ULongArray.reduceRightOrNull(operation: (ULong, acc: ULong) ->
ULong): ULong? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n
 while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n *
@param [operation] function that takes an element and current accumulator value,\n * and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UByteArray.reduceRightOrNull(operation: (UByte, acc: UByte) ->
UByte): UByte? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n
 while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Accumulates value starting with the last element and applying [operation] from right to
left\n * to each element
and current accumulator value.\n * \n * Returns `null` if the array is empty.\n * \n * @param [operation] function
that takes an element and current accumulator value,\n * and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.reduceRightOrNull\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun UShortArray.reduceRightOrNull(operation: (UShort, acc: UShort) ->
UShort): UShort? {\n var index = lastIndex\n if (index < 0) return null\n var accumulator = get(index--)\n
 while (index >= 0) {\n accumulator = operation(get(index--), accumulator)\n }\n return
accumulator\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n
* Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes current accumulator value and an element, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningFold\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.runningFold(initial: R, operation: (acc: R, UInt) -> R): List<R> {\n if (isEmpty()) return
listOf(initial)\n val result = ArrayList<R>(size + 1).apply { add(initial) }\n var accumulator = initial\n for
(element in this) {\n accumulator = operation(accumulator, element)\n result.add(accumulator)\n }\n
return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying

```



[operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that

`acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample samples.collections.Collections.Aggregates.runningFold\n \* \n \* @SinceKotlin("1.4")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R> ULongArray.runningFold(initial: R, operation: (acc: R, ULong) -> R): List<R> {\n \* if (isEmpty()) return listOf(initial)\n \* val result = ArrayList<R>(size + 1).apply { add(initial) }\n \* var accumulator = initial\n \* for (element in this) {\n \* accumulator = operation(accumulator, element)\n \* result.add(accumulator)\n \* }\n \* return result\n \* }\n \* \n \* Returns a list containing successive accumulation values generated by applying

[operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n \* \n \* @SinceKotlin("1.4")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R> UByteArray.runningFold(initial: R, operation: (acc: R, UByte) -> R): List<R> {\n \* if (isEmpty()) return listOf(initial)\n \* val result = ArrayList<R>(size + 1).apply { add(initial) }\n \* var accumulator = initial\n \* for (element in this) {\n \* accumulator = operation(accumulator, element)\n \* result.add(accumulator)\n \* }\n \* return result\n \* }\n \* \n \* Returns a list containing successive accumulation values generated by applying

[operation] from left to right\n \* to each element and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n \* \n \* @SinceKotlin("1.4")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R> UShortArray.runningFold(initial: R, operation: (acc: R, UShort) -> R): List<R> {\n \* if (isEmpty()) return listOf(initial)\n \* val result = ArrayList<R>(size + 1).apply { add(initial) }\n \* var accumulator = initial\n \* for (element in this) {\n \* accumulator = operation(accumulator, element)\n \* result.add(accumulator)\n \* }\n \* return result\n \* }\n \* \n \* Returns a list containing successive accumulation values generated by applying

[operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n \* \n \* @SinceKotlin("1.4")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R> UIntArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UInt) -> R): List<R> {\n \* if (isEmpty()) return listOf(initial)\n \* val result = ArrayList<R>(size + 1).apply { add(initial) }\n \* var accumulator = initial\n \* for (index in indices) {\n \* accumulator = operation(index, accumulator, this[index])\n \* result.add(accumulator)\n \* }\n \* return result\n \* }\n \* \n \* Returns a list containing successive accumulation values generated by applying

[operation] from left to right\n \* to each element, its index in the original array and current accumulator value that starts with [initial] value.\n \* \n \* Note that `acc` value passed to [operation] function should not be mutated;\n \* otherwise it would affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes the index of an element, current accumulator value\n \* and the element itself, and calculates the next accumulator value.\n \* \n \* @sample

samples.collections.Collections.Aggregates.runningFold\n \* \n \* @SinceKotlin("1.4")\n \* @ExperimentalUnsignedTypes\n \* @kotlin.internal.InlineOnly\n \* public inline fun <R>

```

ULongArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, ULong) -> R): List<R> {
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (index in indices) {
 accumulator = operation(index, accumulator, this[index])
 result.add(accumulator)
 }
 return result
}

/** Returns a list containing successive accumulation values generated by applying
[operation] from left to right to each element, its index in the original array and current accumulator value that
starts with [initial] value.
Note that `acc` value passed to [operation] function should not be mutated; otherwise it would affect the previous value in resulting list.
@param [operation] function that takes the index of an element, current accumulator value and the element itself, and calculates the next accumulator
value.
@sample samples.collections.Collections.Aggregates.runningFold
*/
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun <R>
UByteArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UByte) -> R): List<R> {
 if (isEmpty())
 return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (index in indices) {
 accumulator = operation(index, accumulator, this[index])
 result.add(accumulator)
 }
 return result
}

/** Returns a list containing successive accumulation
values generated by applying [operation] from left to right to each element, its index in the original array and
current accumulator value that starts with [initial] value.
Note that `acc` value passed to [operation] function
should not be mutated; otherwise it would affect the previous value in resulting list.
@param [operation]
function that takes the index of an element, current accumulator value and the element itself, and calculates the
next accumulator value.
@sample samples.collections.Collections.Aggregates.runningFold
*/
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public
inline fun <R> UShortArray.runningFoldIndexed(initial: R, operation: (index: Int, acc: R, UShort) -> R): List<R>
{
 if (isEmpty()) return listOf(initial)
 val result = ArrayList<R>(size + 1).apply { add(initial) }
 var accumulator = initial
 for (index in indices) {
 accumulator = operation(index, accumulator, this[index])
 result.add(accumulator)
 }
 return result
}

/** Returns a list containing successive accumulation
values generated by applying [operation] from left to right to each element and current accumulator value that
starts with the first element of this array.
Note that `acc` value passed to [operation] function should not be
mutated; otherwise it would affect the previous value in resulting list.
@param [operation] function that
takes current accumulator value and an element, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.runningReduce
*/
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
UIntArray.runningReduce(operation: (acc: UInt, UInt) -> UInt): List<UInt> {
 if (isEmpty()) return
emptyList()
 var accumulator = this[0]
 val result = ArrayList<UInt>(size).apply { add(accumulator) }
 for (index in 1 until size) {
 accumulator = operation(accumulator, this[index])
 result.add(accumulator)
 }
 return result
}

/** Returns a list containing successive accumulation values generated by applying
[operation] from left to right to each element and current accumulator value that starts with the first element of
this array.
Note that `acc` value passed to [operation] function should not be mutated; otherwise it would
affect the previous value in resulting list.
@param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.runningReduce
*/
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@kotlin.internal.InlineOnly
public inline fun
ULongArray.runningReduce(operation: (acc: ULong, ULong) -> ULong): List<ULong> {
 if (isEmpty()) return
emptyList()
 var accumulator = this[0]
 val result = ArrayList<ULong>(size).apply { add(accumulator) }
 for (index in 1 until size) {
 accumulator = operation(accumulator, this[index])
 result.add(accumulator)
 }
 return result
}

/** Returns a list containing successive accumulation values generated by applying
[operation] from left to right to each element and current accumulator value that starts with the first element of
this array.
Note that `acc` value passed to [operation] function should not be mutated; otherwise it would
affect the previous value in resulting list.
@param [operation] function that takes current accumulator value
and an element, and calculates the next accumulator value.
@sample
samples.collections.Collections.Aggregates.runningReduce
*/

```

affect the previous value in resulting list.\n \* \n \* @param [operation] function that takes current accumulator value and an element,

and calculates the next accumulator value.\n \* \n \* @sample

```

samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduce(operation: (acc: UByte, UByte) -> UByte): List<UByte> {\n if (isEmpty()) return
emptyList()\n var accumulator = this[0]\n val result = ArrayList<UByte>(size).apply { add(accumulator) }\n
for (index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n
 }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element and current accumulator value that starts with the first element of
this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n * otherwise it would
affect the previous value in resulting list.\n * \n * @param [operation]
function that takes current accumulator value and an element, and calculates the next accumulator value.\n * \n *
@sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.runningReduce(operation: (acc: UShort, UShort) -> UShort): List<UShort> {\n if (isEmpty()) return
emptyList()\n var accumulator = this[0]\n val result = ArrayList<UShort>(size).apply { add(accumulator) }\n
for (index in 1 until size) {\n accumulator = operation(accumulator, this[index])\n result.add(accumulator)\n
 }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying
[operation] from left to right\n * to each element, its index in the original array and current accumulator value that
starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be
mutated;\n
* otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.runningReduceIndexed(operation: (index: Int, acc: UInt, UInt) -> UInt): List<UInt> {\n if (isEmpty())
return emptyList()\n var accumulator = this[0]\n val result = ArrayList<UInt>(size).apply { add(accumulator)
}\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element, its index in the original array and
current
accumulator value that starts with the first element of this array.\n * \n * Note that `acc` value passed to [operation]
function should not be mutated;\n * otherwise it would affect the previous value in resulting list.\n * \n * @param
[operation] function that takes the index of an element, current accumulator value\n * and the element itself, and
calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.runningReduceIndexed(operation: (index: Int, acc: ULong, ULong) -> ULong): List<ULong> {\n if
(isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<ULong>(size).apply {
add(accumulator) }\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing
successive accumulation values generated by applying [operation] from left to right\n * to each element, its index in
the original array and current accumulator value that starts with the first element of this array.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes the index of an element, current accumulator value\n *
and the element itself, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.runningReduce\n

```

```

*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.runningReduceIndexed(operation: (index: Int, acc: UByte, UByte) -> UByte): List<UByte> {\n if
(isEmpty()) return emptyList()\n var accumulator = this[0]\n val result = ArrayList<UByte>(size).apply {
add(accumulator) }\n for (index in 1 until size) {\n
 accumulator = operation(index, accumulator, this[index])\n result.add(accumulator)\n }\n return
result\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation] from
left to right\n * to each element, its index in the original array and current accumulator value that starts with the first
element of this array.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes the
index of an element, current accumulator value\n * and the element itself, and calculates the next accumulator
value.\n * \n * @sample samples.collections.Collections.Aggregates.runningReduce\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.runningReduceIndexed(operation: (index: Int, acc: UShort, UShort) -> UShort): List<UShort> {\n if
(isEmpty())
return emptyList()\n var accumulator = this[0]\n val result = ArrayList<UShort>(size).apply { add(accumulator)
}\n for (index in 1 until size) {\n accumulator = operation(index, accumulator, this[index])\n
result.add(accumulator)\n }\n return result\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R>
UIntArray.scan(initial: R, operation: (acc: R, UInt) -> R): List<R> {\n return runningFold(initial,
operation)\n}\n\n/**\n * Returns a list containing successive accumulation values generated by applying [operation]
from left to right\n * to each element and current accumulator value that starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> ULongArray.scan(initial: R, operation: (acc: R, ULong) -> R):
List<R> {\n return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that `acc` value passed to [operation] function should not be mutated;\n *
otherwise it would affect the previous value in resulting list.\n * \n * @param [operation] function that takes current
accumulator value and an element, and calculates the next accumulator value.\n * \n * @sample
samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UByteArray.scan(initial: R, operation: (acc: R, UByte) -> R):
List<R> {\n return runningFold(initial, operation)\n}\n\n/**\n * Returns a list containing successive accumulation
values generated by applying [operation] from left to right\n * to each element and current accumulator value that
starts with [initial] value.\n * \n * Note that
`acc` value passed to [operation] function should not be mutated;\n * otherwise it would affect the previous value in
resulting list.\n * \n * @param [operation] function that takes current accumulator value and an element, and
calculates the next accumulator value.\n * \n * @sample samples.collections.Collections.Aggregates.scan\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalStdlibApi::class)\n
@kotlin.internal.InlineOnly\npublic inline fun <R> UShortArray.scan(initial: R, operation: (acc: R, UShort) -> R):

```

```

List<R> {
 return runningFold(initial, operation)
}

/**
 * Returns a list containing successive accumulation
 values generated by applying [operation] from left to right
 * to each element, its index in the original array and
 current accumulator value that starts with [initial] value.
 * Note that `acc` value passed to [operation] function
 should not be mutated;
 * otherwise it would affect the previous value in resulting list.
 *
 * @param [operation] function that takes the index of an element, current accumulator value
 * and the
 element itself, and calculates the next accumulator value.
 *
 * @sample
 samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> UIntArray.scanIndexed(initial: R, operation: (index: Int, acc: R,
UInt) -> R): List<R> {
 return runningFoldIndexed(initial, operation)
}

/**
 * Returns a list containing
 successive accumulation values generated by applying [operation] from left to right
 * to each element, its index in
 the original array and current accumulator value that starts with [initial] value.
 * Note that `acc` value passed
 to [operation] function should not be mutated;
 * otherwise it would affect the previous value in resulting list.
 *
 * @param [operation] function that takes the index of an element,
 current accumulator value
 * and the element itself, and calculates the next accumulator value.
 *
 * @sample
 samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> ULongArray.scanIndexed(initial: R, operation: (index: Int, acc:
R, ULong) -> R): List<R> {
 return runningFoldIndexed(initial, operation)
}

/**
 * Returns a list
 containing successive accumulation values generated by applying [operation] from left to right
 * to each element,
 its index in the original array and current accumulator value that starts with [initial] value.
 * Note that `acc`
 value passed to [operation] function should not be mutated;
 * otherwise it would affect the previous value in
 resulting list.
 *
 * @param [operation] function that takes the index of an element, current accumulator value
 * and the element itself, and calculates the
 next accumulator value.
 *
 * @sample
 samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> UByteArray.scanIndexed(initial: R, operation: (index: Int, acc:
R, UByte) -> R): List<R> {
 return runningFoldIndexed(initial, operation)
}

/**
 * Returns a list containing
 successive accumulation values generated by applying [operation] from left to right
 * to each element, its index in
 the original array and current accumulator value that starts with [initial] value.
 * Note that `acc` value passed
 to [operation] function should not be mutated;
 * otherwise it would affect the previous value in resulting list.
 *
 * @param [operation] function that takes the index of an element, current accumulator value
 * and the element
 itself, and calculates the next accumulator value.
 *
 * @sample
 samples.collections.Collections.Aggregates.scan
 */
@SinceKotlin("1.4")
@ExperimentalUnsignedTypes
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun <R> UShortArray.scanIndexed(initial: R, operation: (index: Int, acc:
R, UShort) -> R): List<R> {
 return runningFoldIndexed(initial, operation)
}

/**
 * Returns the sum of all
 values produced by [selector] function applied to each element in the array.
 *
 * @Deprecated("Use sumOf
 instead.", ReplaceWith("this.sumOf(selector)"))
 * @DeprecatedSinceKotlin(warningSince =
 "1.5")
 * @SinceKotlin("1.3")
 * @ExperimentalUnsignedTypes
 * @kotlin.internal.InlineOnly
 * public inline fun
 UIntArray.sumBy(selector: (UInt) -> UInt): UInt {
 var sum: UInt = 0u
 for (element in this) {
 sum +=
 selector(element)
 }
 return sum
}

/**
 * Returns the sum of all values produced by [selector] function
 applied to each element in the array.
 *
 * @Deprecated("Use sumOf instead.",
 ReplaceWith("this.sumOf(selector)"))
 * @DeprecatedSinceKotlin(warningSince
 = "1.5")
 * @SinceKotlin("1.3")
 * @ExperimentalUnsignedTypes
 * @kotlin.internal.InlineOnly
 * public inline fun
 ULongArray.sumBy(selector: (ULong) -> UInt): UInt {
 var sum: UInt = 0u
 for (element in this) {
 sum
 += selector(element)
 }
 return sum
}

/**
 * Returns the sum of all values produced by [selector]
 function applied to each element in the array.
 *
 * @Deprecated("Use sumOf instead.",

```

```

ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
\'1.5\')\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.sumBy(selector: (UByte) -> UInt): UInt {\n var sum: UInt = 0\n for (element in this) {\n sum
+= selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince
= \'1.5\')\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.sumBy(selector: (UShort) -> UInt): UInt {\n var sum: UInt = 0\n for (element in this) {\n
sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]
function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
\'1.5\')\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UIntArray.sumByDouble(selector: (UInt) -> Double): Double {\n var sum: Double = 0.0\n for (element in this)
{\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
\'1.5\')\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
ULongArray.sumByDouble(selector: (ULong) -> Double): Double {\n var sum: Double = 0.0\n for (element in
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.",
ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
\'1.5\')\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UByteArray.sumByDouble(selector: (UByte) -> Double): Double {\n var sum: Double = 0.0\n for (element in
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use
sumOf instead.", ReplaceWith("this.sumOf(selector)")\n@DeprecatedSinceKotlin(warningSince =
\'1.5\')\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun
UShortArray.sumByDouble(selector: (UShort) -> Double): Double {\n var sum: Double = 0.0\n for (element in
this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by
[selector] function applied to each element in the array.\n */\n@Deprecated("Use sumOf instead.",
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumOf(selector:
(UInt) -> Double): Double {\n var sum: Double = 0.toDouble()\n for (element in this) {\n sum +=
selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum
of all values produced by [selector] function applied to each element in the array.\n */\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:
(ULong) -> Double): Double {\n var sum: Double = 0.toDouble()\n for (element in this) {\n sum +=
selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function
applied to each element in the array.\n */\n
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:
(UByte) -> Double): Double {\n
 var sum: Double = 0.toDouble()\n for (element in this) {\n sum += selector(element)\n }\n return
sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the

```

array.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfDouble")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector:\n(UShort) -> Double): Double {\n var sum: Double = 0.toDouble()\n for (element in this) {\n sum +=\n selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\n applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n inline fun UIntArray.sumOf(selector: (UInt) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]\n function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:\n(ULong) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in\n the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic\n inline fun UByteArray.sumOf(selector: (UByte) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this)\n {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by\n [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfInt")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector:\n(UShort) -> Int): Int {\n var sum: Int = 0.toInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\n applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sumOf(selector: (UInt)\n-> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in\n the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sumOf(selector:\n(ULong) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector]\n function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sumOf(selector:\n(UByte) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum +=\n selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function\n
```

applied to each element in the array.\n

```
*\n@SinceKotlin("1.4")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfLong")\n\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline
```

```
fun UShortArray.sumOf(selector: (UShort) -> Long): Long {\n var sum: Long = 0.toLong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun UIntArray.sumOf(selector: (UInt) -> UInt): UInt {\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic
```

```
inline fun ULongArray.sumOf(selector: (ULong) -> UInt): UInt {\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun UByteArray.sumOf(selector: (UByte) -> UInt): UInt {\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfUInt")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun UShortArray.sumOf(selector: (UShort) -> UInt): UInt {\n var sum: UInt = 0.toUInt()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic
```

```
inline fun UIntArray.sumOf(selector: (UInt) -> ULong): ULong {\n var sum: ULong = 0.toULong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong")\n\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.Inline\nOnly\npublic inline fun ULongArray.sumOf(selector: (ULong) -> ULong): ULong {\n var sum: ULong = 0.toULong()\n for (element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values produced by [selector] function applied to each element in the array.\n
```

```
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution\nByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong")
```



```

)\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun UByteArray.sumOf(selector: (UByte) -> ULong): ULong {\n var sum: ULong = 0.toULong()\n for
(element in this) {\n sum += selector(element)\n }\n return sum\n}\n\n/**\n * Returns the sum of all values
produced by [selector] function applied to each element in the array.\n
*\n@SinceKotlin("1.5")\n@OptIn(kotlin.experimental.ExperimentalTypeInference::class)\n@OverloadResolution
ByLambdaReturnType\n@Suppress("INAPPLICABLE_JVM_NAME")\n@kotlin.jvm.JvmName("sumOfULong")\n@ExperimentalUnsignedTypes\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sumOf(selector: (UShort) -> ULong): ULong {\n
 var sum: ULong = 0.toULong()\n for (element in this) {\n sum += selector(element)\n }\n return
sum\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` array and the [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UIntArray.zip(other: Array<out
R>): List<Pair<UInt, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from
the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other:
Array<out R>): List<Pair<ULong, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n *
Returns a list of pairs built from the elements of `this` array and the [other] array with the same index.\n * The
returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UByteArray.zip(other: Array<out
R>): List<Pair<UByte, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built
from the elements of `this` array and the [other] array with the same index.\n * The returned list has length of the
shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other:
Array<out R>): List<Pair<UShort, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of
values built from the elements of `this` array and the [other] array with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n * \n
*\n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UIntArray.zip(other: Array<out R>, transform: (a: UInt, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i],
other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] array
with the same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned
list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic
inline fun <R, V> ULongArray.zip(other: Array<out R>, transform: (a: ULong, b: R) -> V): List<V> {\n val size
= minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n
list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements
of `this` array and the [other] array with the same index\n * using the provided [transform] function applied to each
pair of elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UByteArray.zip(other: Array<out R>, transform: (a: UByte, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i],
other[i]))\n }\n return list\n}\n\n

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}\n return list\n}\n\n/**\n
 * Returns a list of values built from the elements of `this` array and the [other] array with the same index\n * using
the provided [transform] function applied to each pair of elements.\n * The returned list has length of the shortest
collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UShortArray.zip(other: Array<out R>, transform: (a: UShort, b: R) -> V): List<V> {\n val size = minOf(size,
other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n
}\n return list\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with
the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic
infix fun <R> UIntArray.zip(other: Iterable<R>): List<Pair<UInt, R>> {\n return zip(other) { t1, t2 -> t1 to t2
}\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with the same
index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> ULongArray.zip(other:
Iterable<R>): List<Pair<ULong, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs
built from the elements of `this` collection and [other] array with the same index.\n * The returned list has length of
the shortest collection.\n * \n * @sample samples.collections.Iterables.Operations.zipIterable\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UByteArray.zip(other:
Iterable<R>): List<Pair<UByte, R>> {\n return zip(other) { t1,
t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of pairs built from the elements of `this` collection and [other] array with
the same index.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterable\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic infix fun <R> UShortArray.zip(other:
Iterable<R>): List<Pair<UShort, R>> {\n return zip(other) { t1, t2 -> t1 to t2 }\n}\n\n/**\n * Returns a list of
values built from the elements of `this` array and the [other] collection with the same index\n * using the provided
[transform] function applied to each pair of elements.\n * The returned list has length of the shortest collection.\n *
\n * @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UIntArray.zip(other: Iterable<R>, transform: (a: UInt, b: R) -> V): List<V> {\n val
arraySize = size\n val list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n var i = 0\n
for (element in other) {\n if (i >= arraySize) break\n list.add(transform(this[i++], element))\n }\n return
list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the [other] collection with the
same index\n * using the provided [transform] function applied to each pair of elements.\n * The returned list has
length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
ULongArray.zip(other: Iterable<R>, transform: (a: ULong, b: R) -> V): List<V> {\n val arraySize = size\n val
list = ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n var i = 0\n for (element in other)
{\n if (i >= arraySize) break\n list.add(transform(this[i++],
element))\n }\n return list\n}\n\n/**\n * Returns a list of values built from the elements of `this` array and the
[other] collection with the same index\n * using the provided [transform] function applied to each pair of
elements.\n * The returned list has length of the shortest collection.\n * \n * @sample
samples.collections.Iterables.Operations.zipIterableWithTransform\n
*/\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <R, V>
UByteArray.zip(other: Iterable<R>, transform: (a: UByte, b: R) -> V): List<V> {\n val arraySize = size\n val list
= ArrayList<V>(minOf(other.collectionSizeOrDefault(10), arraySize))\n var i = 0\n for (element in other) {\n

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with the same index\n \* using the provided [transform] function applied to each pair of elements.\n \* The returned list has length of the shortest array.\n \* \n \* @sample samples.collections.Iterables.Operations.zipIterableWithTransform\n

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*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun <V> UShortArray.zip(other: UShortArray, transform: (a: UShort, b: UShort) -> V): List<V> {\n val size = minOf(size, other.size)\n val list = ArrayList<V>(size)\n for (i in 0 until size) {\n list.add(transform(this[i], other[i]))\n }\n return list\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Array<out UInt>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Array<out ULong>.sum(): ULong {\n var sum: ULong = 0uL\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Array<out UByte>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Array<out UShort>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UIntArray.sum(): UInt {\n return storage.sum().toUInt()\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun ULongArray.sum(): ULong {\n return storage.sum().toULong()\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UByteArray.sum(): UInt {\n return sumOf { it.toUInt() }\n}\n\n/**\n * Returns the sum of all elements in the array.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n@kotlin.internal.InlineOnly\npublic inline fun UShortArray.sum(): UInt {\n return sumOf { it.toUInt() }\n}\n\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n*\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UCollectionsKt")\n\npackage kotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\nimport kotlin.ranges.contains\nimport kotlin.ranges.reversed\n\n/**\n * Returns an array of UByte containing all of the elements of this collection.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UByte>.toUByteArray(): UByteArray {\n val result = UByteArray(size)\n var index = 0\n for (element in this)\n result[index++] = element\n return result\n}\n\n/**\n * Returns an array of UInt containing all of the elements of this collection.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UInt>.toUIntArray(): UIntArray {\n val result = UIntArray(size)\n var index = 0\n for (element in this)\n result[index++] = element\n return result\n}\n\n/**\n * Returns an array of ULong containing all of the elements of this collection.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<ULong>.toULongArray(): ULongArray {\n val result = ULongArray(size)\n var index = 0\n for (element in this)\n result[index++] = element\n return result\n}\n\n/**\n * Returns an array of UShort containing all of the elements of this collection.\n */\n\n*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Collection<UShort>.toUShortArray(): UShortArray {\n val result = UShortArray(size)\n var index = 0\n for (element in this)\n result[index++] =

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element\n return result\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUInt")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Iterable<UInt>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfULong")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Iterable<ULong>.sum(): ULong {\n var sum: ULong = 0uL\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUByte")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Iterable<UByte>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n/**\n * Returns the sum of all elements in the collection.\n
*\n@kotlin.jvm.JvmName("sumOfUShort")\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun Iterable<UShort>.sum(): UInt {\n var sum: UInt = 0u\n for (element in this) {\n sum += element\n }\n return sum\n}\n\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("UComparisonsKt")\n\npackage kotlin.comparisons\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.\n\n/**\n * Returns the greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UInt, b: UInt): UInt {\n return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: ULong, b: ULong): ULong {\n return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UByte, b: UByte): UByte {\n return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of two values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun maxOf(a: UShort, b: UShort): UShort {\n return if (a >= b) a else b\n}\n\n/**\n * Returns the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a: UInt, b: UInt, c: UInt): UInt {\n return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a: ULong, b: ULong, c: ULong): ULong {\n return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a: UByte, b: UByte, c: UByte): UByte {\n return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater of three values.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun maxOf(a: UShort, b: UShort, c: UShort): UShort {\n return maxOf(a, maxOf(b, c))\n}\n\n/**\n * Returns the greater of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UInt, vararg other: UInt): UInt {\n var max = a\n for (e in other) max = maxOf(max, e)\n return max\n}\n\n/**\n * Returns the greater of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: ULong, vararg other: ULong): ULong {\n var max = a\n for (e in other) max = maxOf(max, e)\n return max\n}\n\n/**\n * Returns the greater of the given values.\n
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UByte, vararg other: UByte): UByte {\n var max = a\n for (e in other) max = maxOf(max, e)\n return max\n}\n\n/**\n * Returns the greater of the given values.\n

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*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun maxOf(a: UShort, vararg other: UShort):
UShort {\n var max = a\n for (e in other) max = maxOf(max, e)\n return max\n}\n\n/**\n * Returns the smaller of two values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UInt, b:
UInt): UInt {\n return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: ULong,
b: ULong): ULong {\n return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UByte,
b: UByte): UByte {\n return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of two values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun minOf(a: UShort,
b: UShort): UShort {\n return if (a <= b) a else b\n}\n\n/**\n * Returns the smaller of three values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline
fun minOf(a: UInt, b: UInt, c: UInt): UInt {\n return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of
three values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun minOf(a: ULong, b: ULong, c: ULong): ULong {\n return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of three values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun minOf(a: UByte, b: UByte, c: UByte): UByte {\n return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of three values.\n */
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun minOf(a: UShort, b: UShort, c: UShort): UShort {\n return minOf(a, minOf(b, c))\n}\n\n/**\n * Returns the smaller of the given values.\n */
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun
minOf(a: UInt, vararg
other: UInt): UInt {\n var min = a\n for (e in other) min = minOf(min, e)\n return min\n}\n\n/**\n * Returns
the smaller of the given values.\n */
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a:
ULong, vararg other: ULong): ULong {\n var min = a\n for (e in other) min = minOf(min, e)\n return
min\n}\n\n/**\n * Returns the smaller of the given values.\n */
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a: UByte, vararg other: UByte):
UByte {\n var min = a\n for (e in other) min = minOf(min, e)\n return min\n}\n\n/**\n * Returns the smaller of
the given values.\n */
*\n@SinceKotlin("1.4")\n@ExperimentalUnsignedTypes\npublic fun minOf(a: UShort, vararg
other: UShort): UShort {\n var min = a\n for (e in other) min = minOf(min, e)\n return min\n}\n\n"/\n *
Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("URangesKt")\n\npackage
kotlin.ranges\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.random.*\n\n/**\n * Returns the
first element.\n * \n * @throws NoSuchElementException if the progression is empty.\n */
*\n@SinceKotlin("1.7")\npublic fun UIntProgression.first(): UInt {\n if (isEmpty())\n throw
NoSuchElementException("Progression $this is empty.")\n return this.first\n}\n\n/**\n * Returns the first
element.\n * \n * @throws NoSuchElementException if the progression is empty.\n */
*\n@SinceKotlin("1.7")\npublic fun ULongProgression.first(): ULong {\n if (isEmpty())\n throw
NoSuchElementException("Progression $this is empty.")\n return this.first\n}\n\n/**\n * Returns the first
element, or `null` if the progression is
empty.\n */
*\n@SinceKotlin("1.7")\npublic fun UIntProgression.firstOrNull(): UInt? {\n return if (isEmpty())
null else this.first\n}\n\n/**\n * Returns the first element, or `null` if the progression is empty.\n */

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*\n@SinceKotlin("1.7")\npublic fun ULongProgression.firstOrNull(): ULong? {\n return if (isEmpty()) null else
this.first\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if the progression is
empty.\n * \n * @sample samples.collections.Collections.Elements.last\n *\n@SinceKotlin("1.7")\npublic fun
UIntProgression.last(): UInt {\n if (isEmpty())\n throw NoSuchElementException("Progression $this is
empty.")\n return this.last\n}\n\n/**\n * Returns the last element.\n * \n * @throws NoSuchElementException if
the progression is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.7")\npublic fun ULongProgression.last(): ULong {\n if (isEmpty())\n throw
NoSuchElementException("Progression
$this is empty.")\n return this.last\n}\n\n/**\n * Returns the last element, or `null` if the progression is empty.\n *
\n * @sample samples.collections.Collections.Elements.last\n *\n@SinceKotlin("1.7")\npublic fun
UIntProgression.lastOrNull(): UInt? {\n return if (isEmpty()) null else this.last\n}\n\n/**\n * Returns the last
element, or `null` if the progression is empty.\n * \n * @sample samples.collections.Collections.Elements.last\n
*\n@SinceKotlin("1.7")\npublic fun ULongProgression.lastOrNull(): ULong? {\n return if (isEmpty()) null else
this.last\n}\n\n/**\n * Returns a random element from this range.\n * \n * @throws IllegalArgumentException if this
range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun UIntRange.random(): UInt {\n return random(Random)\n}\n\n/**\n * Returns a random element
from this range.\n * \n * @throws IllegalArgumentException if this
range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline fun ULongRange.random(): ULong {\n return random(Random)\n}\n\n/**\n * Returns a random
element from this range using the specified source of randomness.\n * \n * @throws IllegalArgumentException if
this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun UIntRange.random(random: Random): UInt {\n try {\n return random.nextUInt(this)\n } catch(e:
IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n }\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness.\n * \n * @throws
IllegalArgumentExcep\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULongRange.random(random: Random): ULong {\n try {\n return random.nextULong(this)\n }
catch(e: IllegalArgumentException) {\n throw NoSuchElementException(e.message)\n }\n}\n\n/**\n *
Returns a random element from this range, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UIntRange.randomOrNull():
UInt? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range, or `null` if this
range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULongRange.randomOrNull():
ULong? {\n return randomOrNull(Random)\n}\n\n/**\n * Returns a random element from this range using the
specified source of randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\npublic fun UIntRange.randomOrNull(random:
Random): UInt? {\n if (isEmpty())\n return null\n return random.nextUInt(this)\n}\n\n/**\n * Returns a
random element from this range using the specified source of randomness, or `null` if this range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\npublic fun ULongRange.randomOrNull(random: Random): ULong? {\n if
(isEmpty())\n return null\n return random.nextULong(this)\n}\n\n/**\n * Returns `true` if this range contains
the specified [element].\n * \n * Always returns `false` if the [element] is `null`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\n
public inline operator fun UIntRange.contains(element: UInt?): Boolean {\n return element != null &&

```

```

contains(element)\n}\n\n/**\n * Returns `true` if this range contains the specified [element].\n * \n * Always returns
`false` if the [element] is `null`.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\
npublic
inline operator fun ULongRange.contains(element: ULong?): Boolean {\n return element != null &&
contains(element)\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: UByte): Boolean {\n return contains(value.toInt())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
ULongRange.contains(value: UByte): Boolean {\n return contains(value.toULong())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
ULongRange.contains(value: UInt): Boolean {\n return contains(value.toULong())\n}\n\n/**\n * Checks
if the specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: ULong): Boolean {\n return (value shr UInt.SIZE_BITS) == 0uL &&
contains(value.toInt())\n}\n\n/**\n * Checks if the specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
UIntRange.contains(value: UShort): Boolean {\n return contains(value.toInt())\n}\n\n/**\n * Checks if the
specified [value] belongs to this range.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic operator fun
ULongRange.contains(value: UShort): Boolean {\n return contains(value.toULong())\n}\n\n/**\n * Returns a
progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should be less
than or equal to `this` value.\n * If the [to] value is greater than `this` value the
returned progression is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UByte.downTo(to: UByte): UIntProgression {\n return UIntProgression.fromClosedRange(this.toInt(),
to.toInt(), -1)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -
1.\n * \n * The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value
the returned progression is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UInt.downTo(to: UInt): UIntProgression {\n return UIntProgression.fromClosedRange(this, to, -1)\n}\n\n/**\n *
Returns a progression from this value down to the specified [to] value with the step -1.\n * \n * The [to] value should
be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the returned progression is
empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
infix fun ULong.downTo(to: ULong): ULongProgression {\n return ULongProgression.fromClosedRange(this,
to, -1L)\n}\n\n/**\n * Returns a progression from this value down to the specified [to] value with the step -1.\n * \n
* The [to] value should be less than or equal to `this` value.\n * If the [to] value is greater than `this` value the
returned progression is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UShort.downTo(to: UShort): UIntProgression {\n return UIntProgression.fromClosedRange(this.toInt(),
to.toInt(), -1)\n}\n\n/**\n * Returns a progression that goes over the same range in the opposite direction with the
same step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UIntProgression.reversed(): UIntProgression {\n return UIntProgression.fromClosedRange(last, first, -
step)\n}\n\n/**\n * Returns a progression that goes
over the same range in the opposite direction with the same step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun

```



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ULongProgression.reversed(): ULongProgression {\n return ULongProgression.fromClosedRange(last, first, -
step)\n}\n\n/**\n * Returns a progression that goes over the same range with the given step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UIntProgression.step(step: Int): UIntProgression {\n checkStepIsPositive(step > 0, step)\n return
UIntProgression.fromClosedRange(first, last, if (this.step > 0) step else -step)\n}\n\n/**\n * Returns a progression
that goes over the same range with the given step.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
ULongProgression.step(step: Long): ULongProgression {\n checkStepIsPositive(step > 0, step)\n return
ULongProgression.fromClosedRange(first, last, if (this.step > 0)
step else -step)\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If
the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UByte.until(to: UByte): UIntRange {\n if (to <= UByte.MIN_VALUE) return UIntRange.EMPTY\n return
this.toUInt() .. (to - 1u).toUInt()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to]
value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun UInt.until(to:
UInt): UIntRange {\n if (to <= UInt.MIN_VALUE) return UIntRange.EMPTY\n return this .. (to -
1u).toUInt()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to] value.\n * \n * If the
[to] value is less than or
equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
ULong.until(to: ULong): ULongRange {\n if (to <= ULong.MIN_VALUE) return ULongRange.EMPTY\n
return this .. (to - 1u).toULong()\n}\n\n/**\n * Returns a range from this value up to but excluding the specified [to]
value.\n * \n * If the [to] value is less than or equal to `this` value, then the returned range is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic infix fun
UShort.until(to: UShort): UIntRange {\n if (to <= UShort.MIN_VALUE) return UIntRange.EMPTY\n return
this.toUInt() .. (to - 1u).toUInt()\n}\n\n/**\n * Ensures that this value is not less than the specified
[minimumValue].\n * \n * @return this value if it's greater than or equal to the [minimumValue] or the
[minimumValue] otherwise.\n * \n * @sample samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun UInt.coerceAtLeast(minimumValue: UInt): UInt {\n return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtLeast(minimumValue: ULong): ULong {\n return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this value
if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun UByte.coerceAtLeast(minimumValue: UByte): UByte {\n return if (this < minimumValue) minimumValue
else this\n}\n\n/**\n * Ensures that this value is not less than the specified [minimumValue].\n * \n * @return this
value if it's greater than or equal to the [minimumValue] or the [minimumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtLeastUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceAtLeast(minimumValue: UShort): UShort {\n return if (this < minimumValue) minimumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample

```

```

samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceAtMost(maximumValue:
 UInt): UInt {\n return if (this > maximumValue) maximumValue else this\n}\n\n/**\n * Ensures that this value is
not greater than the specified [maximumValue].\n * \n * @return this value if it's less than or equal to the
[maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceAtMost(maximumValue: ULong): ULong {\n return if (this > maximumValue) maximumValue else
this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return this
value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UByte.coerceAtMost(maximumValue: UByte): UByte {\n return if (this > maximumValue) maximumValue
else this\n}\n\n/**\n * Ensures that this value is not greater than the specified [maximumValue].\n * \n * @return
this value if it's less than or equal to the [maximumValue] or the [maximumValue] otherwise.\n * \n * @sample
samples.comparisons.ComparableOps.coerceAtMostUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UShort.coerceAtMost(maximumValue: UShort): UShort {\n return if (this > maximumValue) maximumValue
else this\n}\n\n/**\n * Ensures that this value lies in the specified range [minimumValue]..[maximumValue].\n * \n
* @return this value if it's in the range, or [minimumValue] if this value is less than [minimumValue], or
[maximumValue] if this value is greater than [maximumValue].\n * \n * @sample
samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UInt.coerceIn(minimumValue: UInt, maximumValue: UInt): UInt {\n if (minimumValue
 > maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
 $maximumValue is less than minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n
 if (this > maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the
specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or
[minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
[maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
ULong.coerceIn(minimumValue: ULong, maximumValue: ULong): ULong {\n if (minimumValue >
 maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
 $maximumValue is less than minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n
 if (this > maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the
specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range, or
[minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
[maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
UByte.coerceIn(minimumValue: UByte, maximumValue: UByte): UByte {\n if (minimumValue >
 maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum
 $maximumValue is less than minimum $minimumValue.")\n if (this < minimumValue) return minimumValue\n
 if (this > maximumValue) return maximumValue\n return this\n}\n\n/**\n * Ensures that this value lies in the
specified range [minimumValue]..[maximumValue].\n * \n * @return this value if it's in the range,
or [minimumValue] if this value is less than [minimumValue], or [maximumValue] if this value is greater than
[maximumValue].\n * \n * @sample samples.comparisons.ComparableOps.coerceInUnsigned\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun

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UShort.coerceIn(minimumValue: UShort, maximumValue: UShort): UShort {
 if (minimumValue > maximumValue) throw IllegalArgumentException("Cannot coerce value to an empty range: maximum $maximumValue is less than minimum $minimumValue.")
 if (this < minimumValue) return minimumValue
 if (this > maximumValue) return maximumValue
 return this
}

/** Ensures that this value lies in the specified [range].
 * @return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.
 * @sample samples.comparisons.ComparableOps.coerceInUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun UInt.coerceIn(range: ClosedRange<UInt>): UInt {
 if (range is ClosedFloatingPointRange) {
 return this.coerceIn<UInt>(range)
 }
 if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to an empty range: $range.")
 return when {
 this < range.start -> range.start
 this > range.endInclusive -> range.endInclusive
 else -> this
 }
}

/** Ensures that this value lies in the specified [range].
 * @return this value if it's in the [range], or `range.start` if this value is less than `range.start`, or `range.endInclusive` if this value is greater than `range.endInclusive`.
 * @sample samples.comparisons.ComparableOps.coerceInUnsigned
 */
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun ULong.coerceIn(range: ClosedRange<ULong>): ULong {
 if (range is ClosedFloatingPointRange) {
 return this.coerceIn<ULong>(range)
 }
 if (range.isEmpty()) throw IllegalArgumentException("Cannot coerce value to an empty range: $range.")
 return when {
 this < range.start -> range.start
 this > range.endInclusive -> range.endInclusive
 else -> this
 }
}

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 */
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("USequencesKt")
package kotlin.sequences

// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt
// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib
import kotlin.random.*

/** Returns the sum of all elements in the sequence.
 * The operation is _terminal_.
 */
@kotlin.jvm.JvmName("sumOfUInt")
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun Sequence<UInt>.sum(): UInt {
 var sum: UInt = 0u
 for (element in this) {
 sum += element
 }
 return sum
}

/** Returns the sum of all elements in the sequence.
 * The operation is _terminal_.
 */
@kotlin.jvm.JvmName("sumOfULong")
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun Sequence<ULong>.sum(): ULong {
 var sum: ULong = 0uL
 for (element in this) {
 sum += element
 }
 return sum
}

/** Returns the sum of all elements in the sequence.
 * The operation is _terminal_.
 */
@kotlin.jvm.JvmName("sumOfUByte")
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun Sequence<UByte>.sum(): UInt {
 var sum: UInt = 0u
 for (element in this) {
 sum += element
 }
 return sum
}

/** Returns the sum of all elements in the sequence.
 * The operation is _terminal_.
 */
@kotlin.jvm.JvmName("sumOfUShort")
@SinceKotlin("1.5")
@WasExperimental(ExperimentalUnsignedTypes::class)
public fun Sequence<UShort>.sum(): UInt {
 var sum: UInt = 0u
 for (element in this) {
 sum += element
 }
 return sum
}

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 */
package kotlin

public expect open class Error : Throwable {
 constructor()
 constructor(message: String?)
 constructor(message: String?, cause: Throwable?)
 constructor(cause: Throwable?)
}

public expect open class Exception : Throwable {
 constructor()
 constructor(message: String?)
 constructor(message: String?, cause: Throwable?)
 constructor(cause:

```

```

Throwable?)\n}\n\npublic expect open class RuntimeException : Exception {\n constructor()\n constructor(message: String?)\n constructor(message:
String?, cause: Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open class
IllegalArgumentException : RuntimeException {\n constructor()\n constructor(message: String?)\n
constructor(message: String?, cause: Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open
class IllegalStateException : RuntimeException {\n constructor()\n constructor(message: String?)\n
constructor(message: String?, cause: Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open
class IndexOutOfBoundsException : RuntimeException {\n constructor()\n constructor(message:
String?)\n}\n\npublic expect open class ConcurrentModificationException : RuntimeException {\n constructor()\n
constructor(message: String?)\n constructor(message: String?, cause: Throwable?)\n constructor(cause:
Throwable?)\n}\n\npublic expect open class UnsupportedOperationException : RuntimeException {\n
constructor()\n constructor(message: String?)\n
constructor(message: String?, cause: Throwable?)\n constructor(cause: Throwable?)\n}\n\npublic expect open
class NumberFormatException : IllegalArgumentException {\n constructor()\n constructor(message:
String?)\n}\n\npublic expect open class NullPointerException : RuntimeException {\n constructor()\n
constructor(message: String?)\n}\n\npublic expect open class ClassCastException : RuntimeException {\n
constructor()\n constructor(message: String?)\n}\n\npublic expect open class AssertionError : Error {\n
constructor()\n constructor(message: Any?)\n}\n\npublic expect open class NoSuchElementException :
RuntimeException {\n constructor()\n constructor(message: String?)\n}\n\n@SinceKotlin("1.3")\npublic
expect open class ArithmeticException : RuntimeException {\n constructor()\n constructor(message:
String?)\n}\n\n@Deprecated("This exception type is not supposed to be thrown or caught in common code and will
be removed from kotlin-stdlib-common
soon.", level = DeprecationLevel.ERROR)\npublic expect open class NoWhenBranchMatchedException :
RuntimeException {\n constructor()\n constructor(message: String?)\n constructor(message: String?, cause:
Throwable?)\n constructor(cause: Throwable?)\n}\n\n@Deprecated("This exception type is not supposed to be
thrown or caught in common code and will be removed from kotlin-stdlib-common soon.", level =
DeprecationLevel.ERROR)\npublic expect class UninitializedPropertyAccessException : RuntimeException {\n
constructor()\n constructor(message: String?)\n constructor(message: String?, cause: Throwable?)\n
constructor(cause: Throwable?)\n}\n\n/**\n * Thrown after invocation of a function or property that was expected to
return `Nothing`, but returned something instead.\n *\n * @SinceKotlin("1.4")\n * @PublishedApi\n * internal class
KotlinNothingValueException : RuntimeException {\n constructor() : super()\n constructor(message: String?) :
super(message)\n constructor(message:
String?, cause: Throwable?) : super(message, cause)\n constructor(cause: Throwable?) :
super(cause)\n}\n\n/**\n * Returns the detailed description of this throwable with its stack trace.\n * The
detailed description includes:\n * - the short description (see [Throwable.toString]) of this throwable;\n * - the
complete stack trace;\n * - detailed descriptions of the exceptions that were [suppressed][suppressedExceptions] in
order to deliver this exception;\n * - the detailed description of each throwable in the [Throwable.cause] chain.\n
*\n * @SinceKotlin("1.4")\n * public expect fun Throwable.stackTraceToString(): String\n * Prints the [detailed
description][Throwable.stackTraceToString] of this throwable to the standard output or standard error output.\n
*\n * @SinceKotlin("1.4")\n * @Suppress("EXTENSION_SHADOWED_BY_MEMBER")\n * public expect fun
Throwable.printStackTrace(): Unit\n * When supported by the platform, adds the specified exception to the
list of exceptions that were\n * suppressed in order to deliver this exception.\n
*\n * @SinceKotlin("1.4")\n * @Suppress("EXTENSION_SHADOWED_BY_MEMBER")\n * public expect fun
Throwable.addSuppressed(exception: Throwable)\n * Returns a list of all exceptions that were suppressed in
order to deliver this exception.\n * The list can be empty:\n * - if no exceptions were suppressed;\n * - if the
platform doesn't support suppressed exceptions;\n * - if this [Throwable] instance has disabled the suppression.\n
*\n * @SinceKotlin("1.4")\n * public expect val Throwable.suppressedExceptions: List<Throwable>\n *
"/*\n *
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```

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```

package
kotlin.js
import kotlin.annotation.AnnotationTarget
 * Gives a declaration (a function, a property or a
class) specific name in JavaScript.
@Target(CLASS,
FUNCTION, PROPERTY, CONSTRUCTOR, PROPERTY_GETTER,
PROPERTY_SETTER)
@OptionalExpectation
public expect annotation class JsName(val name: String)
 * Marks experimental JS export annotations.
 * Note that behavior of these annotations will likely be changed
in the future.
 * Usages of such annotations will be reported as warnings unless an explicit opt-in with
the
[OptIn] annotation, e.g. `@OptIn(ExperimentalJsExport::class)` or with the
`-opt-
in=kotlin.js.ExperimentalJsExport` compiler option is given.
@RequiresOptIn(level =
RequiresOptIn.Level.WARNING)
@MustBeDocumented
@Retention(AnnotationRetention.BINARY)
@Since
Kotlin("1.4")
public annotation class ExperimentalJsExport
 * Exports top-level declaration on JS
platform.
 * Compiled module exposes declarations that are marked with this annotation without name
mangling.
 * This annotation can be applied to either files or top-level declarations.
 * It is currently
prohibited to export the following kinds of declarations:
 * `expect` declarations
 * inline functions
with reified type parameters
 * suspend functions
 * secondary constructors without `@JsName`
 *
extension properties
 * enum classes
 * annotation classes
 * Signatures of exported declarations must
only contain "exportable" types:
 * `dynamic`, `Any`, `String`, `Boolean`, `Byte`, `Short`, `Int`, `Float`,
`Double`
 * `BooleanArray`, `ByteArray`, `ShortArray`, `IntArray`, `FloatArray`, `DoubleArray`
 *
`Array<exportable-type>`
 * Function types with exportable parameters and return types
 * `external` or
`@JsExport` classes and interfaces
 * Nullable counterparts of types above
 * Unit return type. Must not be
nullable
 * This annotation is experimental, meaning that restrictions mentioned above are subject to change.
@ExperimentalJsExport
@Retention(AnnotationRetention.BINARY)
@Target(CLASS,
PROPERTY, FUNCTION, FILE)
@SinceKotlin("1.4")
@OptionalExpectation
public expect annotation class
JsExport()
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package kotlin.io
 * Prints the line separator to the standard output stream.
public expect fun
println()
 * Prints the given [message] and the line separator to the standard output stream.
public expect fun
println(message: Any?)
 * Prints the given [message] to the standard output stream.
public expect fun
print(message: Any?)
 * Reads a line of input from the standard input stream and returns it,
 * or throws a
[RuntimeException] if EOF has already been reached when [readln] is called.
 * LF or CRLF is treated as the
line terminator. Line terminator is not included in the returned string.
 * Currently this function
is not supported in Kotlin/JS and throws [UnsupportedOperationException].
@SinceKotlin("1.6")
public
expect fun readln(): String
 * Reads a line of input from the standard input stream and returns it,
 * or
return `null` if EOF has already been reached when [readlnOrNull] is called.
 * LF or CRLF is treated as the
line terminator. Line terminator is not included in the returned string.
 * Currently this function is not supported
in Kotlin/JS and throws [UnsupportedOperationException].
@SinceKotlin("1.6")
public expect fun
readlnOrNull(): String?
internal class ReadAfterEOFException(message: String?) :
RuntimeException(message)
internal expect interface Serializable
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license that can be found in the license/LICENSE.txt file.
package kotlin.collections
import
kotlin.internal.PlatformDependent
 * Classes that inherit from this interface can be represented as a sequence of elements that can
 * be iterated
over.
 * @param T the type of element being iterated over. The iterator is covariant in its element type.
public interface Iterable<out T> {
 /**
 * Returns an iterator over the elements of this object.
 */
public operator fun iterator(): Iterator<T>
}
 * Classes that inherit from this interface can be represented as
a sequence of elements that can
 * be iterated over and that supports removing elements during iteration.
 *
 * @param T the type of element being iterated over. The mutable iterator is invariant in its element type.
public
interface MutableIterable<out T> : Iterable<T> {
 /**
 * Returns an iterator over the elements of this

```

```

sequence that supports removing elements during iteration.\n *^/n override fun iterator():
MutableIterator<T>\n}\n/n/**\n * A generic collection of elements. Methods
in this interface support only read-only access to the collection;\n * read/write access is supported through the
[MutableCollection] interface.\n * @param E the type of elements contained in the collection. The collection is
covariant in its element type.\n *^/npublic interface Collection<out E> : Iterable<E> {\n // Query Operations\n
/**\n * Returns the size of the collection.\n *^/n public val size: Int\n/n /**\n * Returns `true` if the
collection is empty (contains no elements), `false` otherwise.\n *^/n public fun isEmpty(): Boolean\n/n /**\n
* Checks if the specified element is contained in this collection.\n *^/n public operator fun contains(element:
@UnsafeVariance E): Boolean\n/n override fun iterator(): Iterator<E>\n/n // Bulk Operations\n /**\n *
Checks if all elements in the specified collection are contained in this collection.\n *^/n public fun
containsAll(elements: Collection<@UnsafeVariance E>): Boolean\n}\n/n/**\n
* A generic collection of elements that supports adding and removing elements.\n *^/n * @param E the type of
elements contained in the collection. The mutable collection is invariant in its element type.\n *^/npublic interface
MutableCollection<E> : Collection<E>, MutableIterable<E> {\n // Query Operations\n override fun iterator():
MutableIterator<E>\n/n // Modification Operations\n /**\n * Adds the specified element to the collection.\n
*\n * @return `true` if the element has been added, `false` if the collection does not support duplicates\n * and
the element is already contained in the collection.\n *^/n public fun add(element: E): Boolean\n/n /**\n *
Removes a single instance of the specified element from this\n * collection, if it is present.\n *^/n * @return
`true` if the element has been successfully removed; `false` if it was not present in the collection.\n *^/n public
fun remove(element: E): Boolean\n/n // Bulk Modification Operations\n /**\n * Adds all of the elements of the specified
collection to this
collection.\n *^/n * @return `true` if any of the specified elements was added to the collection, `false` if the
collection was not modified.\n *^/n public fun addAll(elements: Collection<E>): Boolean\n/n /**\n *
Removes all of this collection's elements that are also contained in the specified collection.\n *^/n * @return
`true` if any of the specified elements was removed from the collection, `false` if the collection was not modified.\n
 *^/n public fun removeAll(elements: Collection<E>): Boolean\n/n /**\n * Retains only the elements in this
collection that are contained in the specified collection.\n *^/n * @return `true` if any element was removed
from the collection, `false` if the collection was not modified.\n *^/n public fun retainAll(elements:
Collection<E>): Boolean\n/n /**\n * Removes all elements
from this collection.\n *^/n public fun clear(): Unit\n}\n/n/**\n * A generic ordered collection of elements.
Methods in this interface support only read-only access to the list;\n * read/write access is supported through the
[MutableList] interface.\n * @param E the type of elements contained in the list. The list is covariant in its element
type.\n *^/npublic interface List<out E> : Collection<E> {\n // Query Operations\n/n override val size: Int\n
override fun isEmpty(): Boolean\n override fun contains(element: @UnsafeVariance E): Boolean\n override fun
iterator(): Iterator<E>\n/n // Bulk Operations\n override fun containsAll(elements: Collection<@UnsafeVariance
E>): Boolean\n/n // Positional Access Operations\n /**\n * Returns the element at the specified index in the
list.\n *^/n public operator fun get(index: Int): E\n/n // Search Operations\n /**\n * Returns the index of
the first occurrence of the specified element in the list,
or -1 if the specified\n * element is not contained in the list.\n *^/n public fun indexOf(element:
@UnsafeVariance E): Int\n/n /**\n * Returns the index of the last occurrence of the specified element in the list,
or -1 if the specified\n * element is not contained in the list.\n *^/n public fun lastIndexOf(element:
@UnsafeVariance E): Int\n/n // List Iterators\n /**\n * Returns a list iterator over the elements in this list (in
proper sequence).\n *^/n public fun listIterator(): ListIterator<E>\n/n /**\n * Returns a list iterator over the
elements in this list (in proper sequence), starting at the specified [index].\n *^/n public fun listIterator(index:
Int): ListIterator<E>\n/n // View\n /**\n * Returns a view of the portion of this list between the specified
[fromIndex] (inclusive) and [toIndex] (exclusive).\n *^/n * The returned list is backed by this list, so non-structural
changes in the returned list are

```







```

kotlin.annotation.AnnotationTarget.*\n\n/**\n * Contains the list of code elements which are the possible annotation
targets\n */\npublic enum class AnnotationTarget {\n /** Class, interface or object, annotation class is also
included */\n CLASS,\n /** Annotation class only */\n ANNOTATION_CLASS,\n /** Generic type
parameter */\n TYPE_PARAMETER,\n /** Property
*/\n PROPERTY,\n /** Field, including property's backing field */\n FIELD,\n /** Local variable */\n LOCAL_VARIABLE,\n /** Value parameter of a function or a constructor */\n VALUE_PARAMETER,\n /** Constructor only (primary or secondary) */\n CONSTRUCTOR,\n /** Function (constructors are not
included) */\n FUNCTION,\n /** Property getter only */\n PROPERTY_GETTER,\n /** Property setter
only */\n PROPERTY_SETTER,\n /** Type usage */\n TYPE,\n /** Any expression */\n EXPRESSION,\n /** File */\n FILE,\n /** Type alias */\n @SinceKotlin("1.1")\n TYPEALIAS\n}\n\n/**\n * Contains the list of possible annotation's retentions.\n */\n * Determines how an
annotation is stored in binary output.\n */\npublic enum class AnnotationRetention {\n /** Annotation isn't stored
in binary output */\n SOURCE,\n /** Annotation is stored in binary output, but invisible for reflection */\n BINARY,\n /** Annotation is stored
in binary output and visible for reflection (default retention) */\n RUNTIME\n}\n\n/**\n * This meta-annotation
indicates the kinds of code elements which are possible targets of an annotation.\n */\n * If the target meta-annotation
is not present on an annotation declaration, the annotation is applicable to the following elements:\n * [CLASS],
[PROPERTY], [FIELD], [LOCAL_VARIABLE], [VALUE_PARAMETER], [CONSTRUCTOR], [FUNCTION],
[PROPERTY_GETTER], [PROPERTY_SETTER].\n */\n * @property allowedTargets list of allowed annotation
targets\n */\n @Target(AnnotationTarget.ANNOTATION_CLASS)\n @MustBeDocumented\n public annotation
class Target(vararg val allowedTargets: AnnotationTarget)\n\n/**\n * This meta-annotation determines whether an
annotation is stored in binary output and visible for reflection. By default, both are true.\n */\n * @property value
necessary annotation retention (RUNTIME, BINARY or SOURCE)\n
*/\n @Target(AnnotationTarget.ANNOTATION_CLASS)\n public annotation class Retention(val
value: AnnotationRetention = AnnotationRetention.RUNTIME)\n\n/**\n * This meta-annotation determines that an
annotation is applicable twice or more on a single code element\n
*/\n @Target(AnnotationTarget.ANNOTATION_CLASS)\n public annotation class Repeatable\n\n/**\n * This
meta-annotation determines that an annotation is a part of public API and therefore should be included in the
generated\n * documentation for the element to which the annotation is applied.\n
/\n @Target(AnnotationTarget.ANNOTATION_CLASS)\n public annotation class MustBeDocumented\n\n\n/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n\n @JsName("arrayIterator")\n internal fun arrayIterator(array: dynamic, type: String?) = when (type) {\n null
-> {\n val arr: Array<dynamic> = array\n object : Iterator<dynamic> {\n var index =
0\n override fun hasNext() = index < arr.size\n override fun next() = if (index < arr.size) arr[index++]
else throw NoSuchElementException("$index")\n }\n }\n "BooleanArray" ->
booleanArrayIterator(array)\n "ByteArray" -> byteArrayIterator(array)\n "ShortArray" ->
shortArrayIterator(array)\n "CharArray" -> charArrayIterator(array)\n "IntArray" -> intArrayIterator(array)\n "LongArray" -> longArrayIterator(array)\n "FloatArray" -> floatArrayIterator(array)\n "DoubleArray" ->
doubleArrayIterator(array)\n else -> throw IllegalStateException("Unsupported type argument for arrayIterator:
$type")\n}\n\n @JsName("booleanArrayIterator")\n internal fun booleanArrayIterator(array: BooleanArray) =
object : BooleanIterator() {\n var index = 0\n override fun hasNext() = index < array.size\n override fun
nextBoolean() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n @JsName("byteArrayIterator")\n internal
fun byteArrayIterator(array: ByteArray) = object : ByteIterator() {\n var index = 0\n override fun hasNext() =
index < array.size\n override fun nextByte() = if (index < array.size) array[index++] else throw
NoSuchElementException("$index")\n}\n\n @JsName("shortArrayIterator")\n internal fun
shortArrayIterator(array: ShortArray) = object : ShortIterator() {\n var index = 0\n override fun hasNext() =

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index < array.size\n override fun nextShort() = if (index < array.size) array[index++] else throw
NoSuchElementException("\$index")\n}\n\n@JsName("charArrayIterator")\ninternal fun charArrayIterator(array:
CharArray) = object : CharIterator() {\n var index = 0\n override fun hasNext() = index < array.size\n override
fun nextChar() = if (index < array.size) array[index++] else throw
NoSuchElementException("\$index")\n}\n\n@JsName("intArrayIterator")\ninternal fun intArrayIterator(array:
IntArray) = object : IntIterator()
{\n var index = 0\n override fun hasNext() = index < array.size\n override fun nextInt() = if (index <
array.size) array[index++] else throw
NoSuchElementException("\$index")\n}\n\n@JsName("floatArrayIterator")\ninternal fun
floatArrayIterator(array: FloatArray) = object : FloatIterator() {\n var index = 0\n override fun hasNext() = index
< array.size\n override fun nextFloat() = if (index < array.size) array[index++] else throw
NoSuchElementException("\$index")\n}\n\n@JsName("doubleArrayIterator")\ninternal fun
doubleArrayIterator(array: DoubleArray) = object : DoubleIterator() {\n var index = 0\n override fun hasNext()
= index < array.size\n override fun nextDouble() = if (index < array.size) array[index++] else throw
NoSuchElementException("\$index")\n}\n\n@JsName("longArrayIterator")\ninternal fun longArrayIterator(array:
LongArray) = object : LongIterator() {\n var index = 0\n override fun hasNext() = index < array.size\n
override fun
nextLong() = if (index < array.size) array[index++] else throw
NoSuchElementException("\$index")\n}\n\n@JsName("PropertyMetadata")\ninternal class
PropertyMetadata(@JsName("callableName") val name:
String)\n\n@JsName("noWhenBranchMatched")\ninternal fun noWhenBranchMatched(): Nothing = throw
NoWhenBranchMatchedException()\n\n@JsName("subSequence")\ninternal fun subSequence(c: CharSequence,
startIndex: Int, endIndex: Int): CharSequence {\n if (c is String) {\n return c.substring(startIndex, endIndex)\n
 } else {\n return c.asDynamic().`subSequence_vux9f0$`(startIndex, endIndex)\n
 }\n}\n\n@JsName("captureStack")\ninternal fun captureStack(@Suppress("UNUSED_PARAMETER")
baseClass: JsClass<in Throwable>, instance: Throwable) {\n if (js("Error").captureStackTrace) {\n // Using
uncropped stack traces due to KT-37563.\n // Precise stack traces are implemented in JS IR compiler and
stdlib\n js("Error").captureStackTrace(instance);\n
 } else {\n instance.asDynamic().stack = js("new Error()").stack;\n
 }\n}\n\n@JsName("newThrowable")\ninternal fun newThrowable(message: String?, cause: Throwable?):
Throwable {\n val throwable = js("new Error()")\n throwable.message = if (jsTypeOf(message) ==
"undefined") {\n if (cause != null) cause.toString() else null\n } else {\n message\n }\n
throwable.cause = cause\n throwable.name = "Throwable"\n return
throwable\n}\n\n@JsName("BoxedChar")\ninternal class BoxedChar(val c: Int) : Comparable<Int> {\n override
fun equals(other: Any?): Boolean {\n return other is BoxedChar && c == other.c\n }\n\n override fun
hashCode(): Int {\n return c\n }\n\n override fun toString(): String {\n return
js("this.c").unsafeCast<Char>().toString()\n }\n\n override fun compareTo(other: Int): Int {\n return
js("this.c - other").unsafeCast<Int>()\n }\n\n @JsName("valueOf")\n public
fun valueOf(): Int {\n return c\n }\n}\n\n@kotlin.internal.InlineOnly\ninternal inline fun <T> concat(args:
Array<T>): T {\n val typed = js("Array")(args.size)\n for (i in args.indices) {\n val arr = args[i]\n if
(arr !is Array<*>) {\n typed[i] = js("[]").slice.call(arr)\n } else {\n typed[i] = arr\n }\n }\n
return js("[]").concat.apply(js("[]"), typed);\n}\n\n/** Concat regular Array's and TypedArray's into an Array.\n
*/\n\n@PublishedApi\n@JsName("arrayConcat")\n@Suppress("UNUSED_PARAMETER")\ninternal fun <T>
arrayConcat(a: T, b: T): T {\n return concat(js("arguments"))\n}\n\n/** Concat primitive arrays. Main use:
prepare vararg arguments.\n
* For compatibility with 1.1.0 the arguments may be a mixture of Array's and
TypedArray's.\n
* If the first argument is TypedArray (Byte-, Short-, Char-, Int-, Float-, and DoubleArray)
returns a TypedArray, otherwise an Array.\n
* If the first argument

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has the $type$ property (Boolean-, Char-, and LongArray) copy its value to result.$type$.
 * If the first argument
is a regular Array without the $type$ property default to arrayConcat.
 *
@PublishedApi
@JsName("primitiveArrayConcat")
@Suppress("UNUSED_PARAMETER")
internal
fun <T> primitiveArrayConcat(a: T, b: T): T {
 val args: Array<T> = js("arguments")
 if (a is Array<*> &&
a.asDynamic().`$type$` === undefined) {
 return concat(args)
 } else {
 var size = 0
 for (i in
args.indices) {
 size += args[i].asDynamic().length as Int
 }
 val result = js("new
a.constructor(size)")
 kotlin.copyArrayType(a, result)
 size = 0
 for (i in args.indices) {
 val
arr = args[i].asDynamic()
 for (j in 0 until arr.length) {
 result[size++] = arr[j]
 }
 }
 return result
 }
}
@JsName("booleanArrayOf")
internal fun booleanArrayOf()
= withType("BooleanArray", js("[].slice.call(arguments)"))
@JsName("charArrayOf")
internal fun
charArrayOf() = withType("CharArray", js("new
Uint16Array(arguments)"))
@JsName("longArrayOf")
internal fun longArrayOf() =
withType("LongArray",
js("[].slice.call(arguments)"))
@JsName("withType")
@kotlin.internal.InlineOnly
internal inline fun
withType(type: String, array: dynamic): dynamic {
 array.`$type$` = type
 return array
}
/*
 * Copyright
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by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin.js
/**
 *
Function corresponding to JavaScript's `typeof` operator
 */
@kotlin.internal.InlineOnly
@Suppress("UNUSED_PARAMETER")
public inline fun jsTypeOf(a: Any?):
String = js("typeof a")
/*
 * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.
 */
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
@file:Suppress("UNUSED_PARAMETER", "NOTHING_TO_INLINE")
package kotlin
/**
 *
Returns an empty array of the specified type [T].
 */
public inline fun <T> emptyArray(): Array<T> =
js("[]")
@library
public fun <T> arrayOf(vararg elements: T): Array<T> =
definedExternally
@library
public fun doubleArrayOf(vararg elements: Double): DoubleArray =
definedExternally
@library
public fun floatArrayOf(vararg elements: Float): FloatArray =
definedExternally
@library
public fun longArrayOf(vararg elements: Long): LongArray =
definedExternally
@library
public fun intArrayOf(vararg elements: Int): IntArray =
definedExternally
@library
public fun charArrayOf(vararg elements: Char): CharArray =
definedExternally
@library
public fun shortArrayOf(vararg elements: Short): ShortArray =
definedExternally
@library
public fun byteArrayOf(vararg
elements: Byte): ByteArray = definedExternally
@library
public fun booleanArrayOf(vararg elements:
Boolean): BooleanArray = definedExternally
/**
 * Creates a new instance of the [Lazy] that uses the specified
initialization function [initializer].
 */
public actual fun <T> lazy(initializer: () -> T): Lazy<T> =
UnsafeLazyImpl(initializer)
/**
 * Creates a new instance of the [Lazy] that uses the specified initialization
function [initializer].
 * The [mode] parameter is ignored.
 */
public actual fun <T> lazy(mode:
LazyThreadSafetyMode, initializer: () -> T): Lazy<T> = UnsafeLazyImpl(initializer)
/**
 * Creates a new
instance of the [Lazy] that uses the specified initialization function [initializer].
 * The [lock] parameter is
ignored.
 */
public actual fun <T> lazy(lock: Any?, initializer: () -> T): Lazy<T> =
UnsafeLazyImpl(initializer)
internal fun fillFrom(src: dynamic, dst: dynamic): dynamic {
 val srcLen: Int =
src.length
 val
dstLen: Int = dst.length
 var index: Int = 0
 while (index < srcLen && index < dstLen) dst[index] =
src[index++]
 return dst
}
internal fun arrayCopyResize(source: dynamic, newSize: Int, defaultValue:
Any?): dynamic {
 val result = source.slice(0, newSize)
 copyArrayType(source, result)
 var index: Int =
source.length
 if (newSize > index) {
 result.length = newSize
 while (index < newSize)
result[index++] = defaultValue
 }
 return result
}
internal fun <T> arrayPlusCollection(array: dynamic,
collection: Collection<T>): dynamic {
 val result = array.slice()
 result.length += collection.size
}

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copyArrayType(array, result)\n var index: Int = array.length\n for (element in collection) result[index++] =
element\n return result\n}\n\ninternal fun <T> fillFromCollection(dst: dynamic, startIndex: Int, collection:
Collection<T>): dynamic {\n var index = startIndex\n for (element in collection) dst[index++]
= element\n return dst\n}\n\ninternal inline fun copyArrayType(from: dynamic, to: dynamic) {\n if
(from.`$type$` !== undefined) {\n to.`$type$` = from.`$type$`\n }\n}\n\ninternal inline fun jsIsType(obj:
dynamic, jsClass: dynamic) = js("Kotlin").isType(obj, jsClass)", /*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\n/**\n * Creates a Char with the specified
[code].\n */\n * @sample samples.text.Chars.charFromCode\n
*\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
actual inline fun Char(code: UShort): Char {\n return code.toInt().toChar()\n}\n\n", /*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt
file.\n */\n\npackage kotlin.coroutines\n\nimport
kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED\n\n@SinceKotlin("1.3")\n@JsName("CoroutineImpl")\n
ninternal abstract class CoroutineImpl(private val resultContinuation: Continuation<Any?>) : Continuation<Any?>
{\n protected var state = 0\n protected var exceptionState = 0\n protected var result: Any? = null\n protected
var exception: Throwable? = null\n protected var finallyPath: Array<Int>? = null\n\n public override val context:
CoroutineContext = resultContinuation.context\n\n private var intercepted_: Continuation<Any?>? = null\n\n public fun intercepted(): Continuation<Any?> =\n intercepted_\n ?:\n (context[ContinuationInterceptor]?.interceptContinuation(this) ?: this)\n .also { intercepted_ = it }\n\n override fun resumeWith(result: Result<Any?>) {\n var current = this\n var currentResult: Any? =
result.getOrNull()\n var currentException:
Throwable? = result.exceptionOrNull()\n\n // This loop unrolls recursion in current.resumeWith(param) to
make saner and shorter stack traces on resume\n while (true) {\n with(current) {\n val
completion = resultContinuation\n\n // Set result and exception fields in the current continuation\n
if (currentException == null) {\n this.result = currentResult\n } else {\n state =
exceptionState\n exception = currentException\n }\n\n try {\n val
outcome = doResume()\n if (outcome === COROUTINE_SUSPENDED) return\n currentResult = outcome\n currentException = null\n } catch (exception: dynamic) { // Catch
all exceptions\n currentResult = null\n currentException =
exception.unsafeCast<Throwable>()\n }\n\n releaseIntercepted() // this state machine instance is terminating\n\n if (completion
is CoroutineImpl) {\n // unrolling recursion via loop\n current = completion\n }\n }\n }\n\n // top-level completion reached -- invoke and return\n currentException?.let {\n completion.resumeWithException(it)\n } ?: completion.resume(currentResult)\n }\n\n return\n }\n }\n }\n\n private fun releaseIntercepted() {\n val intercepted =
intercepted_\n if (intercepted != null && intercepted !== this) {\n context[ContinuationInterceptor]!!.releaseInterceptedContinuation(intercepted)\n }\n this.intercepted_ =
CompletedContinuation // just in case\n }\n\n protected abstract fun doResume(): Any?\n}\n\ninternal object
CompletedContinuation
: Continuation<Any?> {\n override val context: CoroutineContext\n get() = error("This continuation is
already complete")\n\n override fun resumeWith(result: Result<Any?>) {\n error("This continuation is
already complete")\n }\n\n override fun toString(): String = "This continuation is already
complete"\n}\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:Suppress("UNCHECKED_CAST", "RedundantVisibilityModifier")\n\npackage kotlin\n\nimport
kotlin.contracts.*\nimport kotlin.internal.InlineOnly\nimport kotlin.jvm.JvmField\nimport

```

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kotlin.jvm.JvmInline\nimport kotlin.jvm.JvmName\n/**\n * A discriminated union that encapsulates a successful
outcome with a value of type [T]\n * or a failure with an arbitrary [Throwable] exception.\n
*\n@SinceKotlin("1.3")\n@JvmInline\npublic
value class Result<out T> @PublishedApi internal constructor(\n @PublishedApi\n internal val value: Any?\n)
: Serializable {\n // discovery\n /**\n * Returns `true` if this instance represents a successful outcome.\n *
In this case [isFailure] returns `false`.\n *\n public val isSuccess: Boolean get() = value !is Failure\n /**\n
* Returns `true` if this instance represents a failed outcome.\n * In this case [isSuccess] returns `false`.\n *\n
public val isFailure: Boolean get() = value is Failure\n // value & exception retrieval\n /**\n * Returns the
encapsulated value if this instance represents [success][Result.isSuccess] or `null`\n * if it is
[failure][Result.isFailure].\n *\n * This function is a shorthand for `getOrElse { null }` (see [getOrElse]) or\n
* `fold(onSuccess = { it }, onFailure = { null })` (see [fold]).\n *\n @InlineOnly\n public inline fun
getOrNull(): T? =\n when
{\n isFailure -> null\n else -> value as T\n }\n /**\n * Returns the encapsulated
[Throwable] exception if this instance represents [failure][isFailure] or `null`\n * if it is [success][isSuccess].\n
*\n * This function is a shorthand for `fold(onSuccess = { null }, onFailure = { it })` (see [fold]).\n *\n public
fun exceptionOrNull(): Throwable? =\n when (value) {\n is Failure -> value.exception\n else ->
null\n }\n /**\n * Returns a string `Success(v)` if this instance represents [success][Result.isSuccess]\n
* where `v` is a string representation of the value or a string `Failure(x)` if\n * it is [failure][isFailure] where `x` is
a string representation of the exception.\n *\n public override fun toString(): String =\n when (value) {\n
is Failure -> value.toString() // "Failure($exception)"\n else -> "Success($value)"\n }\n
// companion with constructors\n /**\n * Companion object for [Result] class that contains its constructor
functions\n * [success] and [failure].\n *\n public companion object {\n /**\n * Returns an instance
that encapsulates the given [value] as successful value.\n *\n
@Suppress("INAPPLICABLE_JVM_NAME")\n @InlineOnly\n @JvmName("success")\n public
inline fun <T> success(value: T): Result<T> =\n Result(value)\n /**\n * Returns an instance that
encapsulates the given [Throwable] [exception] as failure.\n *\n
@Suppress("INAPPLICABLE_JVM_NAME")\n @InlineOnly\n @JvmName("failure")\n public
inline fun <T> failure(exception: Throwable): Result<T> =\n Result(createFailure(exception))\n }\n
internal class Failure(\n @JvmField\n val exception: Throwable\n): Serializable {\n override fun
equals(other:
Any?): Boolean = other is Failure && exception == other.exception\n override fun hashCode(): Int =
exception.hashCode()\n override fun toString(): String = "Failure($exception)"\n }\n /**\n * Creates an
instance of internal marker [Result.Failure] class to\n * make sure that this class is not exposed in ABI.\n
*\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun createFailure(exception: Throwable): Any =\n
Result.Failure(exception)\n /**\n * Throws exception if the result is failure. This internal function minimizes\n
* inlined bytecode for [getOrThrow] and makes sure that in the future we can\n * add some exception-augmenting
logic here (if needed).\n *\n@PublishedApi\n@SinceKotlin("1.3")\ninternal fun Result<*>.throwOnFailure() {\n
if (value is Result.Failure) throw value.exception\n }\n /**\n * Calls the specified function [block] and returns its
encapsulated result if invocation was successful,\n * catching any [Throwable] exception that was thrown
from the [block] function execution and encapsulating it as a failure.\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R> runCatching(block: () -> R): Result<R> {\n
return try {\n Result.success(block())\n } catch (e: Throwable) {\n Result.failure(e)\n }\n }\n /**\n
* Calls the specified function [block] with `this` value as its receiver and returns its encapsulated result if invocation
was successful,\n * catching any [Throwable] exception that was thrown from the [block] function execution and
encapsulating it as a failure.\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T, R>
T.runCatching(block: T.() -> R): Result<R> {\n return try {\n Result.success(block())\n } catch (e:
Throwable) {\n Result.failure(e)\n }\n }\n // -- extensions ---\n /**\n * Returns the encapsulated value if this
instance represents [success][Result.isSuccess] or throws the encapsulated [Throwable] exception\n * if it is

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[failure][Result.isFailure].\n
*\n * This function is a shorthand for `getOrElse { throw it }` (see [getOrElse]).\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T> Result<T>.getOrThrow(): T {\n
throwOnFailure()\n return value as T}\n\n/**\n * Returns the encapsulated value if this instance represents
[success][Result.isSuccess] or the\n * result of [onFailure] function for the encapsulated [Throwable] exception if it
is [failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by
[onFailure] function.\n *\n * This function is a shorthand for `fold(onSuccess = { it }, onFailure = onFailure)` (see
[fold]).\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R> Result<T>.getOrElse(onFailure:
(exception: Throwable) -> R): R {\n contract {\n callsInPlace(onFailure,
InvocationKind.AT_MOST_ONCE)\n }\n return when (val exception = exceptionOrNull()) {\n null ->
value as T\n else -> onFailure(exception)\n
}\n}\n\n/**\n * Returns the encapsulated value if this instance represents [success][Result.isSuccess] or the\n *
[defaultValue] if it is [failure][Result.isFailure].\n *\n * This function is a shorthand for `getOrElse { defaultValue
}` (see [getOrElse]).\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R>
Result<T>.getOrDefault(defaultValue: R): R {\n if (isFailure) return defaultValue\n return value as
T}\n\n/**\n * Returns the result of [onSuccess] for the encapsulated value if this instance represents
[success][Result.isSuccess]\n * or the result of [onFailure] function for the encapsulated [Throwable] exception if it
is [failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by
[onSuccess] or by [onFailure] function.\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T>
Result<T>.fold(\n onSuccess: (value: T) -> R,\n onFailure: (exception: Throwable) -> R)\n): R {\n contract
{\n callsInPlace(onSuccess, InvocationKind.AT_MOST_ONCE)\n callsInPlace(onFailure,
InvocationKind.AT_MOST_ONCE)\n }\n return when (val exception = exceptionOrNull()) {\n null ->
onSuccess(value as T)\n else -> onFailure(exception)\n }\n}\n\n// transformation\n\n/**\n * Returns the
encapsulated result of the given [transform] function applied to the encapsulated value\n * if this instance represents
[success][Result.isSuccess] or the\n * original encapsulated [Throwable] exception if it is
[failure][Result.isFailure].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by
[transform] function.\n * See [mapCatching] for an alternative that encapsulates exceptions.\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T> Result<T>.map(transform: (value: T) -> R):
Result<R> {\n contract {\n callsInPlace(transform, InvocationKind.AT_MOST_ONCE)\n }\n return when
{\n isSuccess -> Result.success(transform(value
as T))\n else -> Result(value)\n }\n}\n\n/**\n * Returns the encapsulated result of the given [transform]
function applied to the encapsulated value\n * if this instance represents [success][Result.isSuccess] or the\n *
original encapsulated [Throwable] exception if it is [failure][Result.isFailure].\n *\n * This function catches any
[Throwable] exception thrown by [transform] function and encapsulates it as a failure.\n * See [map] for an
alternative that rethrows exceptions from `transform` function.\n *\n@InlineOnly\n@SinceKotlin("1.3")\npublic
inline fun <R, T> Result<T>.mapCatching(transform: (value: T) -> R): Result<R> {\n return when {\n
isSuccess -> runCatching { transform(value as T) }\n else -> Result(value)\n }\n}\n\n/**\n * Returns the
encapsulated result of the given [transform] function applied to the encapsulated [Throwable] exception\n * if this
instance represents [failure][Result.isFailure] or the\n * original encapsulated value
if it is [success][Result.isSuccess].\n *\n * Note, that this function rethrows any [Throwable] exception thrown by
[transform] function.\n * See [recoverCatching] for an alternative that encapsulates exceptions.\n
*\n@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R> Result<T>.recover(transform: (exception:
Throwable) -> R): Result<R> {\n contract {\n callsInPlace(transform, InvocationKind.AT_MOST_ONCE)\n
}\n return when (val exception = exceptionOrNull()) {\n null -> this\n else ->
Result.success(transform(exception))\n }\n}\n\n/**\n * Returns the encapsulated result of the given [transform]
function applied to the encapsulated [Throwable] exception\n * if this instance represents [failure][Result.isFailure]
or the\n * original encapsulated value if it is [success][Result.isSuccess].\n *\n * This function catches any
[Throwable] exception thrown by [transform] function and encapsulates it as a failure.\n * See [recover] for an
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alternative

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that rethrows exceptions.\n *^@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <R, T : R>
Result<T>.recoverCatching(transform: (exception: Throwable) -> R): Result<R> {\n return when (val exception =
exceptionOrNull()) {\n null -> this\n else -> runCatching { transform(exception) }\n }\n}\n\n// "peek"
onto value/exception and pipe\n\n/**\n * Performs the given [action] on the encapsulated [Throwable] exception if
this instance represents [failure][Result.isFailure].\n * Returns the original `Result` unchanged.\n *^@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T> Result<T>.onFailure(action: (exception:
Throwable) -> Unit): Result<T> {\n contract {\n callsInPlace(action, InvocationKind.AT_MOST_ONCE)\n }\n exceptionOrNull()?.let { action(it) }\n return this\n}\n\n/**\n * Performs the given [action] on the
encapsulated value if this instance represents [success][Result.isSuccess].\n * Returns the original `Result`
unchanged.\n *^@InlineOnly\n@SinceKotlin("1.3")\npublic inline fun <T> Result<T>.onSuccess(action: (value: T) -> Unit):
Result<T> {\n contract {\n callsInPlace(action, InvocationKind.AT_MOST_ONCE)\n }\n if (isSuccess)
action(value as T)\n return this\n}\n\n// -----\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *^@\npackage kotlin.coroutines\n\nimport kotlin.contracts.*\nimport
kotlin.coroutines.intrinsics.*\nimport kotlin.internal.InlineOnly\n\n/**\n * Interface representing a continuation after
a suspension point that returns a value of type `T`.\n *^@\n@SinceKotlin("1.3")\npublic interface Continuation<in
T> {\n /**\n * The context of the coroutine that corresponds to this continuation.\n *^@\n public val context:
CoroutineContext\n\n /**\n * Resumes the execution of the
corresponding coroutine passing a successful or failed [result] as the\n * return value of the last suspension
point.\n *^@\n public fun resumeWith(result: Result<T>)\n}\n\n/**\n * Classes and interfaces marked with this
annotation are restricted when used as receivers for extension
`suspend` functions. These `suspend` extensions
can only invoke other member or extension `suspend` functions on this particular
`receiver` and are restricted
from calling arbitrary suspension functions.\n *^@\n@SinceKotlin("1.3")\n@Target(AnnotationTarget.CLASS)\n@Retention(AnnotationRetention.BINARY)\npu
blic annotation class RestrictsSuspension\n\n/**\n * Resumes the execution of the corresponding coroutine passing
[value] as the return value of the last suspension point.\n *^@\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline
fun <T> Continuation<T>.resume(value: T): Unit =\n resumeWith(Result.success(value))\n\n/**\n * Resumes the
execution of the corresponding coroutine so that the
[exception] is re-thrown right after the\n * last suspension point.\n *^@\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline fun <T>
Continuation<T>.resumeWithException(exception: Throwable): Unit =\n resumeWith(Result.failure(exception))\n\n/**\n * Creates a [Continuation] instance with the given [context] and
implementation of [resumeWith] method.\n *^@\n@SinceKotlin("1.3")\n@InlineOnly\npublic inline fun <T>
Continuation(\n context: CoroutineContext,\n crossinline resumeWith: (Result<T>) -> Unit\n): Continuation<T>
=\n object : Continuation<T> {\n override val context: CoroutineContext\n get() = context\n\n override fun resumeWith(result: Result<T>) =\n resumeWith(result)\n }\n\n/**\n * Creates a coroutine
without a receiver and with result type [T].\n * This function creates a new, fresh instance of suspendable
computation every time it is invoked.\n *^@\n * To start executing the created coroutine, invoke `resume(Unit)` on the
returned
[Continuation] instance.\n * The [completion] continuation is invoked when the coroutine completes with a result
or an exception.\n * Subsequent invocation of any resume function on the resulting continuation will produce an
[IllegalStateException].\n *^@\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <T>
(suspend () -> T).createCoroutine(\n completion: Continuation<T>): Continuation<Unit> =\n SafeContinuation(createCoroutineUnintercepted(completion).intercepted(), COROUTINE_SUSPENDED)\n\n/**\n * Creates a coroutine with receiver type [R] and result type [T].\n * This function creates a new, fresh instance of
suspendable computation every time it is invoked.\n *^@\n * To start executing the created coroutine, invoke
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`resume(Unit)` on the returned [Continuation] instance.\n * The [completion] continuation is invoked when the
coroutine completes with a result or an exception.\n * Subsequent invocation of any resume function on the resulting
continuation will
 produce an [IllegalStateException].\n * \n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic
fun <R, T> (suspend R.() -> T).createCoroutine(\n receiver: R,\n completion: Continuation<T>)\n:
Continuation<Unit> =\n SafeContinuation(createCoroutineUnintercepted(receiver, completion).intercepted(),
COROUTINE_SUSPENDED)\n\n/**\n * Starts a coroutine without a receiver and with result type [T].\n * This
function creates and starts a new, fresh instance of suspendable computation every time it is invoked.\n * The
[completion] continuation is invoked when the coroutine completes with a result or an exception.\n
*\n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <T> (suspend () ->
T).startCoroutine(\n completion: Continuation<T>)\n {\n
createCoroutineUnintercepted(completion).intercepted().resume(Unit)\n }\n\n/**\n * Starts a coroutine with receiver
type [R] and result type [T].\n * This function creates and starts a new, fresh instance of suspendable
computation every time it is invoked.\n * The [completion] continuation is invoked when the coroutine completes
with a result or an exception.\n * \n@SinceKotlin("1.3")\n@Suppress("UNCHECKED_CAST")\npublic fun <R,
T> (suspend R.() -> T).startCoroutine(\n receiver: R,\n completion: Continuation<T>)\n {\n
createCoroutineUnintercepted(receiver, completion).intercepted().resume(Unit)\n }\n\n/**\n * Obtains the current
continuation instance inside suspend functions and suspends\n * the currently running coroutine.\n * \n * In this
function both [Continuation.resume] and [Continuation.resumeWithException] can be used either synchronously
in\n * the same stack-frame where the suspension function is run or asynchronously later in the same thread or\n *
from a different thread of execution. Subsequent invocation of any resume function will produce an
[IllegalStateException].\n * \n@SinceKotlin("1.3")\n@InlineOnly\npublic suspend inline fun <T>
suspendCoroutine(crossinline block: (Continuation<T>)\n
-> Unit): T {\n contract { callsInPlace(block, InvocationKind.EXACTLY_ONCE) }\n return
suspendCoroutineUninterceptedOrReturn { c: Continuation<T> ->\n val safe =
SafeContinuation(c.intercepted())\n block(safe)\n safe.getOrThrow()\n }\n}\n\n/**\n * Returns the
context of the current coroutine.\n
*\n@SinceKotlin("1.3")\n@Suppress("WRONG_MODIFIER_TARGET")\n@InlineOnly\npublic suspend inline
val coroutineContext: CoroutineContext\n get() {\n throw NotImplementedError("Implemented as
intrinsic")\n }\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
*\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
\n@npackage kotlin.coroutines.intrinsics\n\nimport kotlin.coroutines.\nimport kotlin.internal.InlineOnly\n\n/**\n *
Starts an unintercepted coroutine without a receiver and with result type [T] and executes it until its
first suspension.\n * Returns the result of the coroutine or throws its exception if it does not suspend or
[COROUTINE_SUSPENDED] if it suspends.\n * In the latter case, the [completion] continuation is invoked when
the coroutine completes with a result or an exception.\n * \n * The coroutine is started directly in the invoker's
thread without going through the [ContinuationInterceptor] that might\n * be present in the completion's
[CoroutineContext]. It is the invoker's responsibility to ensure that a proper invocation\n * context is established.\n
*\n * This function is designed to be used from inside of [suspendCoroutineUninterceptedOrReturn] to resume the
execution of the suspended\n * coroutine using a reference to the suspending function.\n
*\n@SinceKotlin("1.3")\n@InlineOnly\npublic actual inline fun <T> (suspend () ->
T).startCoroutineUninterceptedOrReturn(\n completion: Continuation<T>)\n: Any? =
this.asDynamic()(completion, false)\n\n/**\n * Starts an unintercepted coroutine
with receiver type [R] and result type [T] and executes it until its first suspension.\n * Returns the result of the
coroutine or throws its exception if it does not suspend or [COROUTINE_SUSPENDED] if it suspends.\n * In the
latter case, the [completion] continuation is invoked when the coroutine completes with a result or an exception.\n
*\n * The coroutine is started directly in the invoker's thread without going through the [ContinuationInterceptor]
that might\n * be present in the completion's [CoroutineContext]. It is the invoker's responsibility to ensure that a

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proper invocation\n \* context is established.\n \*\n \* This function is designed to be used from inside of [suspendCoroutineUninterceptedOrReturn] to resume the execution of the suspended\n \* coroutine using a reference to the suspending function.\n \*\n@SinceKotlin("1.3")\n@InlineOnly\npublic actual inline fun <R, T> (suspend R.() -> T).startCoroutineUninterceptedOrReturn(\n receiver: R,\n completion: Continuation<T>)\n): Any? = this.asDynamic()(receiver, completion, false)\n \*\n@InlineOnly\ninternal actual inline fun <R, P, T> (suspend R.(P) -> T).startCoroutineUninterceptedOrReturn(\n receiver: R,\n param: P,\n completion: Continuation<T>)\n): Any? = this.asDynamic()(receiver, param, completion, false)\n \*\n \*\*\n \* Creates unintercepted coroutine without receiver and with result type [T].\n \* This function creates a new, fresh instance of suspendable computation every time it is invoked.\n \*\n \* To start executing the created coroutine, invoke `resume(Unit)` on the returned [Continuation] instance.\n \* The [completion] continuation is invoked when coroutine completes with result or exception.\n \*\n \* This function returns unintercepted continuation.\n \* Invocation of `resume(Unit)` starts coroutine immediately in the invoker's call stack without going through the\n \* [ContinuationInterceptor] that might be present in the completion's [CoroutineContext].\n \* It is the invoker's responsibility to ensure that a proper invocation context is established.\n \* Note that [completion] of this function may get invoked in an arbitrary context.\n \*\n \* [Continuation.intercepted] can be used to acquire the intercepted continuation.\n \* Invocation of `resume(Unit)` on intercepted continuation guarantees that execution of\n \* both the coroutine and [completion] happens in the invocation context established by\n \* [ContinuationInterceptor].\n \*\n \* Repeated invocation of any resume function on the resulting continuation corrupts the\n \* state machine of the coroutine and may result in arbitrary behaviour or exception.\n \*\n@SinceKotlin("1.3")\npublic actual fun <T> (suspend () -> T).createCoroutineUnintercepted(\n completion: Continuation<T>)\n): Continuation<Unit> =\n // Kotlin/JS suspend lambdas have an extra parameter `suspended`\n if (this.asDynamic().length == 2) {\n // When `suspended` is true the continuation is created, but not executed\n this.asDynamic()(completion, true)\n } else {\n createCoroutineFromSuspendFunction(completion) {\n this.asDynamic()(completion)\n }\n }\n \*\*\n \* Creates unintercepted coroutine with receiver type [R] and result type [T].\n \* This function creates a new, fresh instance of suspendable computation every time it is invoked.\n \*\n \* To start executing the created coroutine, invoke `resume(Unit)` on the returned [Continuation] instance.\n \* The [completion] continuation is invoked when coroutine completes with result or exception.\n \*\n \* This function returns unintercepted continuation.\n \* Invocation of `resume(Unit)` starts coroutine immediately in the invoker's call stack without going through the\n \* [ContinuationInterceptor] that might be present in the completion's [CoroutineContext].\n \* It is the invoker's responsibility to ensure that a proper invocation context is established.\n \* Note that [completion] of this function may get invoked in an arbitrary context.\n \*\n \* [Continuation.intercepted] can be used to acquire the intercepted continuation.\n \* Invocation of `resume(Unit)` on intercepted continuation guarantees that execution of\n \* both the coroutine and [completion] happens in the invocation context established by\n \* [ContinuationInterceptor].\n \*\n \* Repeated invocation of any resume function on the resulting continuation corrupts the\n \* state machine of the coroutine and may result in arbitrary behaviour or exception.\n \*\n@SinceKotlin("1.3")\npublic actual fun <R, T> (suspend R.() -> T).createCoroutineUnintercepted(\n receiver: R,\n completion: Continuation<T>)\n): Continuation<Unit> =\n // Kotlin/JS suspend lambdas have an extra parameter `suspended`\n if (this.asDynamic().length == 3) {\n // When `suspended` is true the continuation is created, but not executed\n this.asDynamic()(receiver, completion, true)\n } else {\n createCoroutineFromSuspendFunction(completion) {\n this.asDynamic()(receiver, completion)\n }\n }\n \*\*\n \* Intercepts this continuation with [ContinuationInterceptor].\n \*\n \* This function shall be used on the immediate result of [createCoroutineUnintercepted] or [suspendCoroutineUninterceptedOrReturn],\n \* in which case it checks for [ContinuationInterceptor] in the continuation's [context][Continuation.context],\n \* invokes [ContinuationInterceptor.interceptContinuation], caches and returns the result.\n \*\n \* If this function is invoked on other [Continuation] instances it returns `this` continuation unchanged.\n \*\n@SinceKotlin("1.3")\npublic actual fun <T> Continuation<T>.intercepted(): Continuation<T> =\n (this as? CoroutineImpl)?.intercepted() ?: this\n \*\nprivate inline fun <T> createCoroutineFromSuspendFunction(\n completion: Continuation<T>,\n

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crossinline block: () -> Any? \n): Continuation<Unit> { \n @Suppress("UNCHECKED_CAST") \n return object
: CoroutineImpl(completion as Continuation<Any?>) { \n
 override fun doResume(): Any? { \n exception?.let { throw it } \n return block() \n } \n
} \n} \n", /* \n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file. \n
*/ \n \n package kotlin.js \n \n // Mirrors signature from JS IR BE \n // Used for
js.translator/testData/box/number/mulInt32.kt \n @library \n @JsName("imulEmulated") \n @Suppress("UNUSED_P
ARAMETER") \n internal fun imul(x: Int, y: Int): Int =
definedExternally \n \n @Suppress("NOTHING_TO_INLINE") \n internal inline fun isArrayish(o: dynamic) =
js("Kotlin").isArrayish(o) \n", /* \n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file. \n */ \n \n package kotlin \n \n // NOTE: Do not author your exceptions as they are written
in this file, instead use this template: \n /* \n public open class MyException : Exception { \n constructor() : super() \n
 constructor(message: String?) : super(message) \n constructor(message: String?, cause: Throwable?) :
super(message, cause) \n constructor(cause: Throwable?) : super(cause) \n } \n */ \n \n // TODO: remove primary
constructors, make all secondary KT-22055 \n \n @Suppress("USELESS_ELVIS_RIGHT_IS_NULL") \n public
actual open class Error actual constructor(message: String?, cause: Throwable?) : Throwable(message, cause ?: null)
{ \n actual constructor() : this(null, null) \n actual constructor(message: String?) : this(message, null) \n
 actual constructor(cause: Throwable?) : this(undefine
cause) \n } \n \n @Suppress("USELESS_ELVIS_RIGHT_IS_NULL") \n public actual open class Exception actual
constructor(message: String?, cause: Throwable?) : Throwable(message, cause ?: null) { \n actual constructor() :
this(null, null) \n actual constructor(message: String?) : this(message,
null) \n actual constructor(cause: Throwable?) : this(undefine
cause) \n } \n \n public actual open class
RuntimeException actual constructor(message: String?, cause: Throwable?) : Exception(message, cause) { \n
 actual constructor() : this(null, null) \n actual constructor(message: String?) : this(message, null) \n
 actual constructor(cause: Throwable?) : this(undefine
cause) \n } \n \n public actual open class IllegalArgumentException
actual constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) { \n actual
constructor() : this(null, null) \n actual constructor(message: String?) : this(message, null) \n
 actual constructor(cause: Throwable?) : this(undefine
cause) \n } \n \n public actual open class IllegalStateException actual
constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) { \n actual constructor() :
this(null, null) \n actual constructor(message: String?) : this(message, null) \n
 actual constructor(cause:
Throwable?) : this(undefine
cause) \n } \n \n public actual open class IndexOutOfBoundsException actual
constructor(message: String?) : RuntimeException(message) { \n actual constructor() : this(null) \n } \n \n public
actual open class ConcurrentModificationException actual constructor(message: String?, cause: Throwable?) :
RuntimeException(message, cause) { \n actual constructor() : this(null, null) \n actual constructor(message:
String?) : this(message, null) \n actual constructor(cause: Throwable?) : this(undefine
cause) \n } \n \n public actual
open class UnsupportedOperationException actual constructor(message: String?, cause: Throwable?) :
RuntimeException(message, cause) { \n actual constructor() : this(null, null) \n actual constructor(message:
String?) : this(message, null) \n actual constructor(cause: Throwable?) : this(undefine
cause) \n } \n \n public
actual open class NumberFormatException actual constructor(message: String?) :
IllegalArgumentException(message)
{ \n actual constructor() : this(null) \n } \n \n public actual open class NullPointerException actual
constructor(message: String?) : RuntimeException(message) { \n actual constructor() : this(null) \n } \n \n public
actual open class ClassCastException actual constructor(message: String?) : RuntimeException(message) { \n
 actual constructor() : this(null) \n } \n \n public actual open class
AssertionError \n @SinceKotlin("1.4") \n constructor(message: String?, cause: Throwable?) : Error(message, cause)
{ \n actual constructor() : this(null) \n constructor(message: String?) : this(message, null) \n
 actual constructor(message: Any?) : this(message.toString(), message as? Throwable) \n } \n \n public actual open class

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NoSuchElementException actual constructor(message: String?) : RuntimeException(message) {\n actual
constructor() : this(null)\n}\n\n@SinceKotlin("1.3")\npublic actual open class ArithmeticException actual
constructor(message: String?) : RuntimeException(message) {\n actual
 constructor() : this(null)\n}\n\npublic actual open class NoWhenBranchMatchedException actual
constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n actual constructor() :
this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual constructor(cause:
Throwable?) : this(undefiend, cause)\n}\n\npublic actual open class UninitializedPropertyAccessException actual
constructor(message: String?, cause: Throwable?) : RuntimeException(message, cause) {\n actual constructor() :
this(null, null)\n actual constructor(message: String?) : this(message, null)\n actual constructor(cause:
Throwable?) : this(undefiend, cause)\n}\n", "/*\n * Copyright 2010-2019 JetBrains s.r.o. Use of this source code is
governed by the Apache 2.0 license\n * that can be found in the license/LICENSE.txt file.\n
*\n\n@file:Suppress("UNUSED_PARAMETER")\n\npackage kotlin.js\n\n@kotl.in.internal.InlineOnly\n\ninternal
inline fun jsDeleteProperty(obj:
 Any, property: Any) {\n js("delete obj[property]")\n}\n\n@kotl.in.internal.InlineOnly\n\ninternal inline fun
jsBitwiseOr(lhs: Any?, rhs: Any?): Int =\n js("lhs | rhs").unsafeCast<Int>()", "/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin.math\n\n/**\n * Returns
this value with the sign bit same as of the [sign] value.\n * If [sign] is `NaN` the sign of the result is undefiend.\n
*\n\n@SinceKotlin("1.2")\n\npublic actual fun Double.withSign(sign: Double): Double {\n val thisSignBit =
js("Kotlin").doubleSignBit(this).unsafeCast<Int>()\n val newSignBit =
js("Kotlin").doubleSignBit(sign).unsafeCast<Int>()\n return if (thisSignBit == newSignBit) this else -
this}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed
 by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage kotlin\n\n/**\n *
Returns a bit representation of the specified floating-point value as [Long]\n * according to the IEEE 754 floating-
point "double format" bit layout.\n *\n\n@SinceKotlin("1.2")\n\n@library("doubleToBits")\n\npublic actual fun
Double.toBits(): Long = definedExternally\n\n/**\n * Returns a bit representation of the specified floating-point
value as [Long]\n * according to the IEEE 754 floating-point "double format" bit layout,\n * preserving `NaN`
values exact layout.\n *\n\n@SinceKotlin("1.2")\n\n@library("doubleToRawBits")\n\npublic actual fun
Double.toRawBits(): Long = definedExternally\n\n/**\n * Returns the [Double] value corresponding to a given bit
representation.\n *\n\n@SinceKotlin("1.2")\n\n@kotl.in.internal.InlineOnly\n\npublic actual inline fun
Double.Companion.fromBits(bits: Long): Double =
js("Kotlin").doubleFromBits(bits).unsafeCast<Double>()\n\n/**\n * Returns
 a bit representation of the specified floating-point value as [Int]\n * according to the IEEE 754 floating-point
"single format" bit layout.\n *\n * Note that in Kotlin/JS [Float] range is wider than "single format" bit layout can
represent,\n * so some [Float] values may overflow, underflow or loose their accuracy after conversion to bits and
back.\n *\n\n@SinceKotlin("1.2")\n\n@library("floatToBits")\n\npublic actual fun Float.toBits(): Int =
definedExternally\n\n/**\n * Returns a bit representation of the specified floating-point value as [Int]\n * according
to the IEEE 754 floating-point "single format" bit layout,\n * preserving `NaN` values exact layout.\n *\n * Note
that in Kotlin/JS [Float] range is wider than "single format" bit layout can represent,\n * so some [Float] values
may overflow, underflow or loose their accuracy after conversion to bits and back.\n
*\n\n@SinceKotlin("1.2")\n\n@library("floatToRawBits")\n\npublic actual fun Float.toRawBits(): Int =
definedExternally\n\n/**\n * Returns the [Float] value corresponding to a given bit representation.\n
*\n\n@SinceKotlin("1.2")\n\n@kotl.in.internal.InlineOnly\n\npublic actual inline fun Float.Companion.fromBits(bits:
Int): Float =
js("Kotlin").floatFromBits(bits).unsafeCast<Float>()\n\n\n@Suppress("NOTHING_TO_INLINE")\n\ninternal
inline fun Long(low: Int, high: Int) = js("Kotlin").Long.fromBits(low, high).unsafeCast<Long>()\n\ninternal inline

```



```
totally\nprivate object Category {\n val decodedRangeStart: IntArray\n val decodedRangeCategory: IntArray\n\n init {\n val toBase64 =
 \"\"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/\n val fromBase64 =
 IntArray(128)\n for (i in toBase64.indices) {\n fromBase64[toBase64[i].code] = i\n }\n \n //
 rangeStartDiff.length = 1482\n val rangeStartDiff
 =
 \"gBCFEDCKCDCaDDaDBhBCEEDDDDDDEDXBHYBH5BRwBGDCHDCIDFHDCDFDCDEIRTEE7BGHDDJI
 CBbSEMOfGERwDEDDDDDECEFCRBjHbFDCYFFCCzBvBjBBFC3B0hDBmBDGpBDDcBBJlBEECLGDFC
 LDCgBBKVKEDiDDHCFECECKCEODBeBc5CLBOKhBJDDDDWEBHFCFCPBZDEL1BVBSLPBgBB2BDB
 DICFBHKCKCPDBHEDWBHEDDDDEDEDIBDGDCCKCGDDDDCGECCWBFMDDCEDDDCHDDHKDDDBK
 DBHFCWBFgFDBDDFEDBPDDKCHBGDCHEDWBFgFDCEDEDBHDDGDCKCGJEGDBFDDFDDDDDDME
 FDBFDCGBOKDFDFDCGFCXBQDDDDDBEGEDFDDKHBHDDGFCXBKBFCEFCFCHCHECKDNCCHFC
 oBEDECFDDDDHDCKJBGDCSDYBJEHBFDDEBIGKDCMuBFHEBGBIBKcKbFBFBXEIFJDFDGCKCEgB
 BDPEDGKKGECIBkBEObDFFLBkBBIBEFFECIBrBCEBEGDBKGGDDDDDDCHDENDCFEKDDIBDDFrBCD
 pKBECGEECPBBEChBBECGEECPB5BBECjCCDJUDQKG2CCGDsTCRBaCDrCDDIHNBEDLSDCJSCMLFC
 CM0BDHGLBFBDDKKGGEFDDDBKjBB1BHfChBDFmCKfDDDDDDCGDCFDKcFLsBEaGKBDiBXDDD1
 BDGDEIGJEKGGHGBGCMF/BEBvBCEDDFHEKHKJJDDeDDGDkSBFEDCIEkBIICDFKDDKeGCJHrBCDI
 IDBNBHEBEFDBFsB/BNBiBIB6BBF1EIiDJIGCGCIIIIIGCGCIIIIIOCIIIIIDFEDDBFEDDDDEBDIFDDFEDBLF
 GCEEICFBjCDEDCLDKBFBKCCGDDKDDNDgBQNEBDMPPFDEDEBFFHECEBEEDFBEDDQjBCEDEFFC
 CJHBeEEfsIIEUCHCxCBeZoBGICZLV8BuCW3FBjB2BIvDB4HOesBFCfKQgljEW/BEgBCiWbVCGnBCgBBp
 DvBBuBEDBHEFGCCjDCGEDCFCFIBDDF4BHCObXJHBHBHBHBHBHBHBHBgBCECGHGEDI FBKCEDM
 EtBaB5CM2GaMEDDCKCGFCJEDFDDDC2CDDDB6CDCFrBB+CDEKgBkBMQfBKeIBPgBKnbPgKguGgC9
 vUDVB3jBD3BJoBGCsIBDQKCUuBDDKCCcMCKCGIXJcNC/BBHGKDECEVFBECEEBqBDDGDFDXD
 CEBDGEG0BEICyBQCICKGSGDEBKcICXLCLBdDBvBDECCDNCKEFCFKFBpBFEDCJDBICCKCEQBG
 DDBYBEDCEFBYDCELEDDCKGCGJHBHBrBBEJDEwCjBIDCKGk9KMxExBEggCgoGuLCqDmBHMFFC
 KBNBFBIIsDQRrLCQgCC2BoBMCCQGEGQDCQDDDDDFDGDECEEFBnEEBFEDCKCDCaDDaDBFCKBtBCf
 DGCGCFEDDDDDCECKDC\n }\n\n val diff = decodeVarLenBase64(rangeStartDiff, fromBase64, 1342)\n val start = IntArray(diff.size + 1)\n for (i in diff.indices) {\n start[i + 1] = start[i] + diff[i]\n }\n decodedRangeStart = start\n \n // rangeCategory.length = 2033\n val rangeCategory =
 \"PsY44a41W54UYJZYB14W7XC15WZPsYa84bl9Zw8b85Lr7C44brlerrYBZBCZCiBiBiBhCiiBhChiBhiCBhh
 ChiCihBhChCChiBhChiCIBCFhjCiBiBihDhiBhCCihBiBBhCCFCEbEbEb7EbGhCk7BixRkiCi4BRbh4BhRhCBR
 BCiiBBCiBChiZBCBCiBcGHhChCiBRBxxEYC40Rx8c6RGUm4GRFRFYRQZ44acG4wRYFEFGJYIIGFIYGwc
 GmkEmcGFJfI8cYxwFGFRGFRJFGkkcYkxRm6aFGEgmmEmEGRYRFGxxYFRFRFRGQGIFmIFIGIooGF
 GFGYJ4EFmoIRFlxRlXRFRFxlRxlFIIRxmFIGxxIoxRomFRIRxlFlmGRJfAL86F4mRxmGoRFRFRFRFIIRxGIGR
 xmGxmGmxRxGRFIRJmmFIIGYRmmIRFIIRIRFRFIIRFxxGFIGmmRoxImxRFRIIgmxRJ4aRFGxmIoRFlxRlX
 FRFIIRFxxGIImoGmmRxoIxoIGRmmIRxlFlmGRJ8FLRxmFFRFIIRIIIRxxFIRlXRxIFRFRFRooGRIOoRomRxFRIR
 JLc8aRmoIoGFIIIRIRFRFRImGmoIoORGRGRxmGFRIIgmxRJRYL8IGooYFIIRIRFRFRFRmIIxGooRGRIRlXFG
 RJxIFRGFIIRIRFlmGIGxIoORomF8xRxxFIILFGRJLcFxmIoRFRFRFxIRFRxxGxxIoOGmmRRIRJxxIoYRFIIIG
 RaFEGYJYRxlFRFRFIRFIIGlXRFxEGRJRFRFcY84c8mGcJL8G1WIFRFRGIGmmYFGRGRcGc88RYcYRFIGI
 GmmIomGFJYFooGmlFIIGmmFIFIFGFmoIGIomFJIm8cBhRRxxBC4ECFRFRFIRFRFRFRFRFRFRFRFRFRFRFR
 FRGYLRFcRBRCxxUF8YFMF1WRFYKFRFRFRGFRGFRGFRFIIRIRGRFmmIGIoGGY44E46FmxRJRLRY44
 U44GmmQRJREFFRFGFGRFRFxmGmoIoOGmoIoxRxxIoGIGRxxcx4YJFRFRFRFRJLRcFmmIomRx4YFoGG
 mRomIGIGmxRJRYEYRGmmHRGIFmIGmIoOGFRJYcGcRmmIFomGmmIomGmlFJfmoGooGGIRYFFIGI
 RYJRFJFEYCRBRBYRGYGIGFGFIIGomGFRCECECEGRGHcCiBCBCRBRCBCBCBRBCxBCBCRCDCDCD
 CiiRBj7CbCiiRBj7b7iCiiRxiCBRbCBbxxCiiRBj7bRMQUY9+V9+VYtOQMY9eY43X44Z1WY54XYMQRQrER
 LZ12ELZ12RERaRGHGHR88B88BihBhiChhC8hcZbC8BB8CBCFi8cihBZBC8Z8CLKhCKr8cRZcZc88ZcZc85
 Z8ZcZc1WcZc1WcZcZcZcRcRLcLcZcZcZcZc1WlCZ1WZ1WZcZ1WZ1WZ1WZcZcZcRcRcBRcixBBCiBBihC
```



```

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*\n\npackage kotlin.text\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n//
See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n// 222 ranges totally\nprivate object Letter
{\n val decodedRangeStart: IntArray\n val decodedRangeLength: IntArray\n val decodedRangeCategory:
IntArray\n \n init {\n val toBase64 =
\"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789+/\n val fromBase64 =
IntArray(128)\n for (i in toBase64.indices) {\n fromBase64[toBase64[i].code] = i\n }\n \n //
rangeStartDiff.length = 356\n val rangeStartDiff
=
\"hCgBpCQGYHZH5BRpBPPPPPRMP5BPPICPP6BkEPPPPcXPzBvBrB3BOiDoBHwD+E3DauCnFmBmB2D
6E1BIBTiBmBIBP5BhBiBrBvBjBqBnBPRtBiCmCtBIB0BmB5BiB7BmBgEmChBzGCoEoGVpBSfRhBPqKQ2B
wBYoFgB4CJuTiEvBuCuDrF5DgEgFIJ1DgFmBQtBsBRGsB+BPiBID1EIjDPRPPPPPPPPGQSQS/DxENVNU+
B9zCwBwBPPCkDPNnBPqDYY1R8B7FkFgTgwGgwUwmBgKwBuBScmEP/BPPPPPrBP8B7F1B/ErBqC6B7B
iBmBfQsBUwCw/KwqIwLwETPcPjQgJxfgBIBsD\"\n val diff = decodeVarLenBase64(rangeStartDiff,
fromBase64, 222)\n val start = IntArray(diff.size)\n for (i in diff.indices) {\n if (i == 0) start[i] =
diff[i]\n else start[i] = start[i - 1] + diff[i]\n }\n decodedRangeStart = start\n \n //
rangeLength.length = 328\n val rangeLength =
\"aaMBXHYH5BRpBPPPPPRMP5BPPICPPzBDOOPPcXPzBvBjB3BOhDmBBpB7DoDYxB+EiBP1DoExBkB
QhBekBPmBgBhBctBiBMWOOXhCsBpBkBUV3Ba4BkB0D1CgBXgBtD4FSdBfPhBpKP0BvBXjEQ2CGsT8Dh
BtCqDpFvD1D3E0lrD2EkBjRBD0BsB+BPiBIB1EIjDPPPPPPPPPPGPPMNLsBNPNPKCvBvBPPCkDPBmBPh
DXXgD4B6FzEgDguG9vUtkB9JcuBSckEP/BPPPPPPBPf4FrBjEhBpC3B5BKaWPrBOWCk/KsCuLqDHPbPxPsFt
EaaqDL\"\n
 decodedRangeLength = decodeVarLenBase64(rangeLength, fromBase64, 222)\n \n //
rangeCategory.length = 959\n val rangeCategory =
\"GFjgggUHGFFZZZmzpz5qB6s6020B60ptltB6smt2sB60mz22B1+vv+8BZZ5s2850BW5q1ymtB506smzBF3q1
q1qB1q1q1+Bgi4wDTm74g3KigxqM60q1q1Bq1o1q1BF1qlrqrBZ2q5wprBGFZWWZGHFsjiioLowgmOowjkw
CkgoiIk7ligGogioBkwkiYkzj2oNoi+sbkwj04DghhkQ8wgiYkgoioDsgnkwC4gikQ/v+85BkwvoIsgoyI4ygu0whiw
Eowri4CoghsJowgqYowgm4DkwgsY/nwnzPowhmYkg6wI8yggZswikwHgxgmIoxgqYkkgk4DkxgmIkgoioBsgsso
BgzgyI8g9gL8g9ki0wguJoxgkoC0wgioFkw/wI0w53iF4gioYowjmgBHGq1qkgwBF1q1q8qBHwghuIwghyKk0go
QkwgoQk3goQHGFHkyg0pBgxj6IoinkxDswno7Ikwhz9Bo0gioB8z48Rwli0xN0mpjoX8w78pDwltoqKHFGGwwg
siHFH3q1q16BFHWFZ1q10q1B2q1wq1B1q10q1B2q1yq1B6q1gq1Biq1qhxBir1qp1Bqt1q1qB1g1q1+B//3q16B//q
1qBH/qlq9Bholqq9B1i00a1q10qD1op1HkwmigEigiy6Cptogq1Bixo1kDq7/j00B2qgoBWGFm1lz50B6s5q1+BG
WhggzhwBFFhgk4//Bo2jigE8wguI8wguI8wguUog1qoB4qjmIwwi2KgkYHHH4IBgiFWkgIWOghssMmz5smrBZ
3q1y50B5sm7gzBtz1smzB5smz50BqzqtmzB5sgzqzBF2/9//5BowgoIwmnkzPkwgk4C8ys65BkgoqI0wgy6FghquZo
2giY0ghiIshg24B4ghsQ8QF/v1q1OFs0O8iCHHF1qggz/B8wg6Iznv+//B08QgohsjK0QGfK7hsQ4gB\"\n
 decodedRangeCategory = decodeVarLenBase64(rangeCategory, fromBase64, 222)\n }\n\n\n*\n * Returns
`true` if this character is a letter.\n *\ninternal fun Char.isLetterImpl(): Boolean {\n return getLetterType() !=
0\n}\n\n\n*\n * Returns `true` if this character is a lower case letter, or it has contributory property
`Other_Lowercase`.\n *\ninternal fun Char.isLowercaseImpl(): Boolean {\n return getLetterType() == 1 ||
code.isOtherLowercase()\n}\n\n\n*\n * Returns `true` if this character is an upper case letter, or it has contributory
property `Other_Uppercase`.\n *\ninternal fun Char.isUppercaseImpl(): Boolean {\n return getLetterType() == 2
|| code.isOtherUppercase()\n}\n\n\n*\n * Returns\n * - `1` if the character is a lower case letter,\n * - `2` if the
character is an
upper case letter,\n * - `3` if the character is a letter but not a lower or upper case letter,\n * - `0` otherwise.\n
*\nprivate fun Char.getLetterType(): Int {\n val ch = this.code\n val index =
binarySearchRange(Letter.decodedRangeStart, ch)\n val rangeStart = Letter.decodedRangeStart[index]\n val
rangeEnd = rangeStart + Letter.decodedRangeLength[index] - 1\n val code =
Letter.decodedRangeCategory[index]\n if (ch > rangeEnd) {\n return 0\n }\n val lastTwoBits = code

```

```

and 0x3\n\n if (lastTwoBits == 0) { // gap pattern\n var shift = 2\n var threshold = rangeStart\n for (i
in 0..1) {\n threshold += (code shr shift) and 0x7f\n if (threshold > ch) {\n return 3\n }\n shift += 7\n threshold += (code shr shift) and 0x7f\n if (threshold > ch) {\n return
0\n }\n shift += 7\n }\n return 3\n }\n\n if (code <= 0x7) {\n return lastTwoBits\n }\n\n val distance = (ch - rangeStart)\n val shift = if (code <=
0x1F) distance % 2 else distance\n return (code shr (2 * shift)) and 0x3\n}\n\n"/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE:
THIS FILE IS AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nprivate object OtherLowercase {\n internal
val otherLowerStart = intArrayOf(\n 0x00aa, 0x00ba, 0x02b0, 0x02c0, 0x02e0, 0x0345, 0x037a, 0x1d2c,
0x1d78, 0x1d9b, 0x2071, 0x207f, 0x2090, 0x2170, 0x24d0, 0x2c7c, 0xa69c, 0xa770, 0xa7f8, 0xab5c, \n)\n internal val otherLowerLength = intArrayOf(\n 1, 1, 9, 2, 5, 1, 1, 63, 1, 37, 1, 1, 13, 16, 26, 2, 2, 1, 2, 4, \n)\n}\n\ninternal
fun Int.isOtherLowercase(): Boolean {\n val index = binarySearchRange(OtherLowercase.otherLowerStart,
this)\n return index >= 0 && this < OtherLowercase.otherLowerStart[index] +
OtherLowercase.otherLowerLength[index]\n}\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE: THIS FILE IS AUTO-
GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\ninternal fun Int.isOtherUppercase(): Boolean
{\n return this in 0x2160..0x216f\n || this in 0x24b6..0x24cf\n}\n\n"/*\n * Copyright 2010-2022 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE:
THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.js.*\n\n/**\n * Returns a
character at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this char
sequence.\n */\n * @sample samples.collections.Collections.Elements.elementAt\n */\n\npublic actual fun
CharSequence.elementAt(index: Int): Char {\n return elementAtOrElse(index) { throw
IndexOutOfBoundsException("index: $index, length: $length") }\n}\n\n"/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n\n// NOTE: THIS FILE IS
AUTO-GENERATED by the GenerateUnicodeData.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n\n4 ranges totally\n\ninternal fun
Char.titlecaseCharImpl():
Char {\n val code = this.code\n // Letters repeating <Lu, Lt, Ll> sequence and code of the Lt is a multiple of 3,
e.g. <\u01c4, \u01c5, \u01c6>\n if (code in 0x01c4..0x01cc || code in 0x01f1..0x01f3) {\n return (3 * ((code +
1) / 3)).toChar()\n }\n // Lower case letters whose title case mapping equivalent is equal to the original letter\n
if (code in 0x10d0..0x10fa || code in 0x10fd..0x10ff) {\n return this\n }\n return uppercaseChar()\n}\n\n"/*\n *
Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\n/\n\n// NOTE: THIS FILE IS AUTO-GENERATED by the GenerateStandardLib.kt\n// See:
https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\nimport kotlin.js.*\n\nimport
kotlin.ranges.contains\n\nimport kotlin.ranges.reversed\n\n/**\n * Returns an element
at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is out of bounds of this array.\n */\n *
@sample samples.collections.Collections.Elements.elementAt\n */\n\n\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\n\npublic actual fun UIntArray.elementAt(index: Int):
UInt {\n return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size") }\n}

```



```

}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun ULongArray.elementAt(index: Int):
ULong {\n return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UByteArray.elementAt(index: Int):
UByte {\n return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns an element at the given [index] or throws an [IndexOutOfBoundsException] if the [index] is
out of bounds of this array.\n * \n * @sample samples.collections.Collections.Elements.elementAt\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UShortArray.elementAt(index: Int):
UShort {\n return elementAtOrElse(index) { throw IndexOutOfBoundsException("index: $index, size: $size")}
}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UIntArray.asList(): List<UInt> {\n
return object : AbstractList<UInt>(), RandomAccess {\n override val size: Int get() = this@asList.size\n
override fun
isEmpty(): Boolean = this@asList.isEmpty()\n override fun contains(element: UInt): Boolean =
this@asList.contains(element)\n override fun get(index: Int): UInt {\n
AbstractList.checkElementIndex(index, size)\n return this@asList[index]\n }\n override fun
indexOf(element: UInt): Int {\n @Suppress("USELESS_CAST")\n if ((element as Any?) !is UInt)
return -1\n return this@asList.indexOf(element)\n }\n override fun lastIndexOf(element: UInt): Int
{\n @Suppress("USELESS_CAST")\n if ((element as Any?) !is UInt) return -1\n return
this@asList.lastIndexOf(element)\n }\n}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun ULongArray.asList(): List<ULong>
{\n return object : AbstractList<ULong>(), RandomAccess {\n override val size: Int get() = this@asList.size\n
override fun isEmpty(): Boolean = this@asList.isEmpty()\n override fun contains(element: ULong):
Boolean = this@asList.contains(element)\n override fun get(index: Int): ULong {\n
AbstractList.checkElementIndex(index, size)\n return this@asList[index]\n }\n override fun
indexOf(element: ULong): Int {\n @Suppress("USELESS_CAST")\n if ((element as Any?) !is
ULong) return -1\n return this@asList.indexOf(element)\n }\n override fun lastIndexOf(element:
ULong): Int {\n @Suppress("USELESS_CAST")\n if ((element as Any?) !is ULong) return -1\n
return this@asList.lastIndexOf(element)\n }\n }\n}\n}\n\n/**\n * Returns a [List] that wraps the original
array.\n * \n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UByteArray.asList():
List<UByte> {\n return object : AbstractList<UByte>(), RandomAccess {\n override val size:
Int get() = this@asList.size\n override fun isEmpty(): Boolean = this@asList.isEmpty()\n override fun
contains(element: UByte): Boolean = this@asList.contains(element)\n override fun get(index: Int): UByte {\n
AbstractList.checkElementIndex(index, size)\n return this@asList[index]\n }\n override fun
indexOf(element: UByte): Int {\n @Suppress("USELESS_CAST")\n if ((element as Any?) !is
UByte) return -1\n return this@asList.indexOf(element)\n }\n override fun lastIndexOf(element:
UByte): Int {\n @Suppress("USELESS_CAST")\n if ((element as Any?) !is UByte) return -1\n
return this@asList.lastIndexOf(element)\n }\n }\n}\n}\n\n/**\n * Returns a [List] that wraps the original array.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic actual fun UShortArray.asList(): List<UShort>
{\n return object : AbstractList<UShort>(), RandomAccess
{\n override val size: Int get() = this@asList.size\n override fun isEmpty(): Boolean =
this@asList.isEmpty()\n override fun contains(element: UShort): Boolean = this@asList.contains(element)\n
override fun get(index: Int): UShort {\n AbstractList.checkElementIndex(index, size)\n return
this@asList[index]\n }\n override fun indexOf(element: UShort): Int {\n @Suppress("USELESS_CAST")\n
 if ((element as Any?) !is UShort) return -1\n return

```

```

this@asList.indexOf(element)\n }\n override fun lastIndexOf(element: UShort): Int {\n
@Suppress(\\"USELESS_CAST\\")\n if ((element as Any?) !is UShort) return -1\n return
this@asList.lastIndexOf(element)\n }\n }\n}\n\n",/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/\n// NOTE: THIS FILE IS AUTO-GENERATED by the
GenerateUnicodeData.kt\n// See: https://github.com/JetBrains/kotlin/tree/master/libraries/stdlib\n\n/\n\n// 9 ranges
totally\n/**\n * Returns `true` if this character is a whitespace.\n */\n\ninternal fun Char.isWhitespaceImpl(): Boolean
{\n val ch = this.code\n return ch in 0x0009..0x000d\n || ch in 0x001c..0x0020\n || ch == 0x00a0\n
 || ch > 0x1000 && (\n ch == 0x1680\n || ch in 0x2000..0x200a\n || ch == 0x2028\n
 || ch == 0x2029\n || ch == 0x202f\n || ch == 0x205f\n || ch == 0x3000\n
)\n}\n\n",/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this
source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin\n\n\npublic
actual fun interface Comparator<T> {\n @JsName(\\"compare\\")\n public actual fun compare(a: T, b: T):
Int\n}\n\n",/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.js\n\nimport
kotlin.annotation.AnnotationTarget.*\n\n\n@Target(FUNCTION)\n@Deprecated(\\"Use inline extension function with
body using dynamic\\")\npublic annotation class nativeGetter\n\n\n@Target(FUNCTION)\n@Deprecated(\\"Use inline
extension function with body using dynamic\\")\npublic annotation class
nativeSetter\n\n\n@Target(FUNCTION)\n@Deprecated(\\"Use inline extension function with body using
dynamic\\")\npublic annotation class nativeInvoke\n\n\n@Target(CLASS, FUNCTION, PROPERTY)\n\n\ninternal
annotation class library(public val name: String = \\\")\n\n\n@Target(CLASS)\n\n\ninternal annotation class
marker\n\n\n/**\n * Gives a declaration (a function, a property
or a class) specific name in JavaScript.\n */\n\n * This may be useful in the following cases:\n */\n\n * * There are two
functions for which the compiler gives same name in JavaScript, you can\n */\n mark one with `@JsName(...)` to
prevent the compiler from reporting error.\n */\n\n * * You are writing a JavaScript library in Kotlin. The compiler
produces mangled names\n */\n for functions with parameters, which is unnatural for usual JavaScript developer.\n */\n
\n * You can put `@JsName(...)` on functions you want to be available from JavaScript.\n */\n\n * * For some reason you
want to rename declaration, e.g. there's common term in JavaScript\n */\n for a concept provided by the declaration,
which is uncommon in Kotlin.\n */\n\n * Example:\n */\n\n * ``` kotlin\n */\n\n * class Person(val name: String) {\n */\n
\n * fun\n */\n\n * hello() {\n */\n\n * println(\\"Hello $name!\")\n */\n\n * }\n */\n\n * @JsName(\\"helloWithGreeting\\")\n */\n
\n * fun\n */\n\n * hello(greeting: String) {\n */\n\n * println(\\"$greeting $name!\")\n */\n\n * }\n */\n
\n * }\n */\n\n * ```\n */\n\n * @property name the name which compiler uses both for declaration itself and for all references to
the declaration.\n */\n\n * It's required to denote a valid JavaScript identifier.\n */\n\n
*/\n\n\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, FUNCTION, PROPERTY, CONSTRUCTOR,
PROPERTY_GETTER, PROPERTY_SETTER)\npublic actual annotation class JsName(actual val name:
String)\n\n\n/**\n * Denotes an `external` declaration that must be imported from native JavaScript library.\n */\n\n
\n * The compiler produces the code relevant for the target module system, for example, in case of CommonJS,\n */\n\n * it
will import the declaration via the `require(...)` function.\n */\n\n * The annotation can be used on top-level external
declarations (classes, properties, functions) and files.\n */\n\n * In case of file (which can't be `external`) the following rule
applies: all the declarations in\n */\n\n * the file must be `external`. By applying `@JsModule(...)` on a file you tell the
compiler to import a
JavaScript object\n */\n\n * that contain all the declarations from the file.\n */\n\n * Example:\n */\n\n * ``` kotlin\n */\n
\n * @JsModule(\\"jquery\\")\n */\n\n * external abstract class JQuery() {\n */\n\n * // some declarations here\n */\n\n * }\n */\n
\n * @JsModule(\\"jquery\\")\n */\n\n * external fun JQuery(element: Element): JQuery\n */\n\n * ```\n */\n\n * @property import name
of a module to import declaration from.\n */\n\n * It is not interpreted by the Kotlin compiler, it's passed as is

```

directly to the target module system.\n \*\n \* @see JsNonModule\n

```

*\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, PROPERTY, FUNCTION, FILE)\npublic
annotation class JsModule(val import: String)\n\n/**\n * Denotes an `external` declaration that can be used without
module system.\n *\n * By default, an `external` declaration is available regardless your target module system.\n *
However, by applying [JsModule] annotation you can make a declaration unavailable to *plain* module system.\n *
Some JavaScript libraries are distributed both as
a standalone downloadable piece of JavaScript and as a module available\n * as an npm package.\n * To tell the
Kotlin compiler to accept both cases, you can augment [JsModule] with the `@JsNonModule` annotation.\n *\n *
For example:\n *\n * ``` kotlin\n * @JsModule("jquery")\n * @JsNonModule\n * @JsName("$")\n * external
abstract class JQuery() {\n * // some declarations here\n * }\n *\n * @JsModule("jquery")\n * @JsNonModule\n
* @JsName("$")\n * external fun JQuery(element: Element): JQuery\n * ```\n *\n * @see JsModule\n

```

```

*\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, PROPERTY, FUNCTION, FILE)\npublic
annotation class JsNonModule\n\n/**\n * Adds prefix to `external` declarations in a source file.\n *\n * JavaScript
does not have concept of packages (namespaces). They are usually emulated by nested objects.\n * The compiler
turns references to `external` declarations either to plain unprefixed names (in case of *plain* modules)\n * or to
plain imports.\n * However,
if a JavaScript library provides its declarations in packages, you won't be satisfied with this.\n * You can tell the
compiler to generate additional prefix before references to `external` declarations using the `@JsQualifier(...)`\n *
annotation.\n *\n * Note that a file marked with the `@JsQualifier(...)` annotation can't contain non-`external`
declarations.\n *\n * Example:\n *\n * ```\n * @file:JsQualifier("my.jsPackageName")\n * package
some.kotlinPackage\n *\n * external fun foo(x: Int)\n *\n * external fun bar(): String\n * ```\n *\n * @property value
the qualifier to add to the declarations in the generated code.\n * It must be a sequence of valid JavaScript
identifiers separated by the `.` character.\n * Examples of valid qualifiers are: `foo`, `bar.Baz`, `_.$.f`.\n *\n *
@see JsModule\n

```

```

*\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.FILE)\npublic
annotation class JsQualifier(val value: String)\n\n/**\n * Exports top-level declaration
on JS platform.\n *\n * Compiled module exposes declarations that are marked with this annotation without name
mangling.\n *\n * This annotation can be applied to either files or top-level declarations.\n *\n * It is currently
prohibited to export the following kinds of declarations:\n *\n * * `expect` declarations\n * * inline functions with
reified type parameters\n * * suspend functions\n * * secondary constructors without `@JsName`\n * *
extension properties\n * * enum classes\n * * annotation classes\n *\n * Signatures of exported declarations must
only contain "exportable" types:\n *\n * * `dynamic`, `Any`, `String`, `Boolean`, `Byte`, `Short`, `Int`, `Float`,
`Double`\n * * `BooleanArray`, `ByteArray`, `ShortArray`, `IntArray`, `FloatArray`, `DoubleArray`\n * *
`Array<exportable-type>`\n * * Function types with exportable parameters and return types\n * * `external` or
`@JsExport` classes and interfaces\n * * Nullable counterparts of types above\n
* * Unit return type. Must not be nullable\n *\n * This annotation is experimental, meaning that restrictions
mentioned above are subject to change.\n

```

```

*\n@ExperimentalJsExport\n@Retention(AnnotationRetention.BINARY)\n@Target(CLASS, PROPERTY,
FUNCTION, FILE)\n@SinceKotlin("1.3")\npublic actual annotation class JsExport\n\n/**\n * Forces a top-level
property to be initialized eagerly, opposed to lazily on the first access to file and/or property.\n

```

```

*\n@ExperimentalStdlibApi\n@Retention(AnnotationRetention.BINARY)\n@Target(AnnotationTarget.PROPER
TY)\n@SinceKotlin("1.6")\n@Deprecated("This annotation is a temporal migration assistance and may be
removed in the future releases, please consider filing an issue about the case where it is needed")\npublic annotation
class EagerInitialization","/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt
file.\n *\npackage kotlin.jvm\n\n// these are used in common generated code in stdlib\n\n TODO: find how to
deprecate these ones\n\n@Target(AnnotationTarget.FIELD)\n@Retention(AnnotationRetention.SOURCE)\npublic
actual annotation class Volatile\n\n@Target(AnnotationTarget.FUNCTION,

```

```

AnnotationTarget.PROPERTY_GETTER,
AnnotationTarget.PROPERTY_SETTER)\n@Retention(AnnotationRetention.SOURCE)\npublic actual annotation
class Synchronized\n"/\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the
[MutableCollection] interface.\n *\n * @param E the type of elements contained in the collection. The collection is
invariant in its element type.\n *\n\npublic actual abstract class AbstractMutableCollection<E> protected actual
constructor() : AbstractCollection<E>(),
MutableCollection<E> {\n\n actual abstract override fun add(element: E): Boolean\n\n actual override fun
remove(element: E): Boolean {\n checkIsMutable()\n val iterator = iterator()\n while
(iterator.hasNext()) {\n if (iterator.next() == element) {\n iterator.remove()\n return true\n
}\n }\n return false\n }\n\n actual override fun addAll(elements: Collection<E>): Boolean {\n
checkIsMutable()\n var modified = false\n for (element in elements) {\n if (add(element)) modified =
true\n }\n return modified\n }\n\n actual override fun removeAll(elements: Collection<E>): Boolean {\n
checkIsMutable()\n return (this as MutableIterable<E>).removeAll { it in elements }\n }\n\n actual
override fun retainAll(elements: Collection<E>): Boolean {\n checkIsMutable()\n return (this as
MutableIterable<E>).removeAll
{ it !in elements }\n }\n\n actual override fun clear(): Unit {\n checkIsMutable()\n val iterator =
this.iterator()\n while (iterator.hasNext()) {\n iterator.next()\n iterator.remove()\n }\n }\n\n
@Deprecated("Provided so that subclasses inherit this function", level = DeprecationLevel.HIDDEN)\n
@jsName("toJSON")\n protected fun toJSON(): Any = this.toArray()\n\n /**\n * This method is called
every time when a mutating method is called on this mutable collection.\n * Mutable collections that are built
(frozen) must throw `UnsupportedOperationException`.\n *\n\n internal open fun checkIsMutable(): Unit {
}\n\n"/\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n\n * Based on GWT AbstractList\n * Copyright 2007 Google
Inc.\n *\n\n\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the [MutableList]
interface.\n *\n * @param E the type of elements contained in the list. The list is invariant in its element type.\n
*\n\n\npublic actual abstract class AbstractMutableList<E> protected actual constructor() :
AbstractMutableCollection<E>(), MutableList<E> {\n protected var modCount: Int = 0\n\n abstract override fun
add(index: Int, element: E): Unit\n\n abstract override fun removeAt(index: Int): E\n\n abstract override fun
set(index: Int, element: E): E\n\n /**\n * Adds the specified element to the end of this list.\n *\n * @return
`true` because the list is always modified as the result of this operation.\n *\n\n actual override fun add(element:
E): Boolean {\n checkIsMutable()\n add(size, element)\n return true\n }\n\n actual override fun
addAll(index: Int, elements: Collection<E>): Boolean {\n AbstractList.checkPositionIndex(index,
size)\n\n checkIsMutable()\n var _index = index\n var changed = false\n for (e in elements) {\n
add(_index++, e)\n changed = true\n }\n return changed\n }\n\n actual override fun clear() {\n
checkIsMutable()\n removeRange(0, size)\n }\n\n actual override fun removeAll(elements:
Collection<E>): Boolean {\n checkIsMutable()\n return removeAll { it in elements }\n }\n\n actual
override fun retainAll(elements: Collection<E>): Boolean {\n checkIsMutable()\n return removeAll { it !in
elements }\n }\n\n\n actual override fun iterator(): MutableIterator<E> = IteratorImpl()\n\n actual override fun
contains(element: E): Boolean = indexOf(element) >= 0\n\n actual override fun indexOf(element: E): Int {\n
for (index in 0..lastIndex) {\n if (get(index) == element) {\n return index\n }\n }\n return -1\n }\n\n
actual override fun lastIndexOf(element: E): Int {\n for (index in lastIndex downTo 0) {\n
if (get(index) == element) {\n return index\n }\n }\n return -1\n }\n\n actual
override fun listIterator(): MutableListIterator<E> = listIterator(0)\n\n actual override fun listIterator(index: Int):
MutableListIterator<E> = ListIteratorImpl(index)\n\n\n actual override fun subList(fromIndex: Int, toIndex: Int):
MutableList<E> = SubList(this, fromIndex, toIndex)\n\n /**\n * Removes the range of elements from this list

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starting from [fromIndex] and ending with but not including [toIndex].\n */\n protected open fun
removeRange(fromIndex: Int, toIndex: Int) {\n val iterator = listIterator(fromIndex)\n repeat(toIndex -
fromIndex) {\n iterator.next()\n iterator.remove()\n }\n }\n\n /**\n * Compares this list with
another list instance with the ordered
structural equality.\n *\n * @return true, if [other] instance is a [List] of the same size, which contains the
same elements in the same order.\n */\n override fun equals(other: Any?): Boolean {\n if (other === this)
return true\n if (other !is List<*>) return false\n return AbstractList.orderedEquals(this, other)\n }\n\n /**\n * Returns the hash code value for this list.\n */\n override fun hashCode(): Int =
AbstractList.orderedHashCode(this)\n\n private open inner class IteratorImpl : MutableIterator<E> {\n /**
the index of the item that will be returned on the next call to [next]() */\n protected var index = 0\n /**
the index of the item that was returned on the previous call to [next]() */\n * or [ListIterator.previous]() (for
`ListIterator`),\n * -1 if no such item exists\n */\n protected var last = -1\n override fun
hasNext(): Boolean = index < size\n\n override fun next(): E {\n if (!hasNext()) throw NoSuchElementException()\n last = index++\n return get(last)\n }\n override fun remove() {\n check(last != -1) { "Call next() or previous()
before removing element from the iterator." }\n removeAt(last)\n index = last\n last = -1\n }\n }\n\n /**\n * Implementation of `MutableListIterator` for abstract lists.\n */\n private inner class
ListIteratorImpl(index: Int) : IteratorImpl(), MutableListIterator<E> {\n init {\n AbstractList.checkPositionIndex(index, this@AbstractMutableList.size)\n this.index = index\n }\n override fun hasPrevious(): Boolean = index > 0\n override fun nextIndex(): Int = index\n override fun
previous(): E {\n if (!hasPrevious()) throw NoSuchElementException()\n last = --index\n return get(last)\n }\n override fun previousIndex(): Int = index - 1\n override fun add(element: E) {\n add(index, element)\n index++\n last = -1\n }\n override fun set(element: E) {\n check(last != -1) { "Call next() or previous() before updating element value with the iterator." }\n set(last,
element)\n }\n }\n\n private class SubList<E>(private val list: AbstractMutableList<E>, private val
fromIndex: Int, toIndex: Int) : AbstractMutableList<E>(), RandomAccess {\n private var _size: Int = 0\n init {\n AbstractList.checkRangeIndexes(fromIndex, toIndex, list.size)\n this._size = toIndex -
fromIndex\n }\n override fun add(index: Int, element: E) {\n AbstractList.checkPositionIndex(index, _size)\n list.add(fromIndex + index, element)\n _size++\n }\n override fun get(index: Int): E {\n AbstractList.checkElementIndex(index, _size)\n return list[fromIndex + index]\n }\n override fun removeAt(index: Int): E {\n AbstractList.checkElementIndex(index, _size)\n val result
= list.removeAt(fromIndex + index)\n _size--\n return result\n }\n override fun set(index:
Int, element: E): E {\n AbstractList.checkElementIndex(index, _size)\n return list.set(fromIndex +
index, element)\n }\n override val size: Int get() = _size\n internal override fun checkIsMutable():
Unit = list.checkIsMutable()\n }\n\n}\n\n"/**\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n/**\n * Based on GWT AbstractMap\n * Copyright 2007 Google Inc.\n */\n\npackage kotlin.collections\n\n/**\n * Provides
a skeletal implementation of the [MutableMap] interface.\n */\n * The implementor is required to implement
[entries] property, which should return mutable set of map entries, and [put] function.\n */\n * @param K the type of
map keys. The map is invariant in its key type.\n */\n * @param V the type of map values. The map is invariant in its
value type.\n */\n\npublic actual abstract class AbstractMutableMap<K, V> protected actual constructor() :
AbstractMap<K, V>(), MutableMap<K, V> {\n\n /**\n * A mutable [Map.Entry] shared by several [Map]
implementations.\n */\n internal open class SimpleEntry<K, V>(override val key: K, value: V) :
MutableMap.MutableEntry<K, V> {\n constructor(entry: Map.Entry<K, V>) : this(entry.key, entry.value)\n private var _value = value\n override val value: V get() = _value\n override fun setValue(newValue:

```

```

V): V {\n // Should check if the map containing this entry is mutable.\n // However, to not
increase entry memory footprint it might be worthwhile not to check it here and\n // force subclasses that
implement `build()` (freezing) operation to implement their own `MutableEntry`.\n//
this@AbstractMutableMap.checkIsMutable()\n val oldValue = this._value\n this._value = newValue\n
 return oldValue\n }\n\n override fun hashCode(): Int = entryHashCode(this)\n override fun
toString(): String = entryToString(this)\n override fun equals(other: Any?): Boolean = entryEquals(this,
other)\n\n }\n\n // intermediate abstract class to workaround KT-43321\n internal abstract class
AbstractEntrySet<E : Map.Entry<K, V>, K, V> : AbstractMutableSet<E>() {\n final override fun
contains(element: E): Boolean = containsEntry(element)\n abstract fun containsEntry(element: Map.Entry<K,
V>): Boolean\n final override fun remove(element: E): Boolean = removeEntry(element)\n abstract fun
removeEntry(element: Map.Entry<K, V>): Boolean\n }\n\n actual override fun clear() {\n entries.clear()\n
}\n\n private var _keys: MutableSet<K>? = null\n actual override val keys: MutableSet<K>\n get() {\n
if (_keys == null) {\n _keys = object : AbstractMutableSet<K>() {\n override fun
add(element: K): Boolean = throw UnsupportedOperationException("Add is not supported on keys")\n override fun clear() {\n
 this@AbstractMutableMap.clear()\n }\n override
operator fun contains(element: K): Boolean = containsKey(element)\n override operator fun iterator():
MutableIterator<K> {\n val entryIterator = entries.iterator()\n return object :
MutableIterator<K> {\n override fun hasNext(): Boolean = entryIterator.hasNext()\n
 override fun next(): K = entryIterator.next().key\n override fun remove() =
entryIterator.remove()\n }\n }\n override fun remove(element: K): Boolean
{\n checkIsMutable()\n if (containsKey(element)) {\n
this@AbstractMutableMap.remove(element)\n return true\n }\n return
false\n }\n override val size: Int get() = this@AbstractMutableMap.size\n }\n }\n override fun checkIsMutable(): Unit = this@AbstractMutableMap.checkIsMutable()\n }\n }\n return _keys!!\n }\n\n actual abstract override fun put(key: K, value: V): V?\n actual override fun
putAll(from: Map<out K, V>) {\n checkIsMutable()\n for ((key, value) in from) {\n put(key,
value)\n }\n }\n\n private var _values: MutableCollection<V>? = null\n actual override val values:
MutableCollection<V>\n get() {\n if (_values == null) {\n _values = object :
AbstractMutableCollection<V>() {\n override fun add(element: V): Boolean = throw
UnsupportedOperationException("Add is not supported on values")\n override fun clear() =
this@AbstractMutableMap.clear()\n override operator fun contains(element: V): Boolean =
containsValue(element)\n override operator fun iterator(): MutableIterator<V> {\n val
entryIterator = entries.iterator()\n return object : MutableIterator<V> {\n override fun
hasNext(): Boolean = entryIterator.hasNext()\n override fun next(): V = entryIterator.next().value\n
 override fun remove() = entryIterator.remove()\n }\n }\n }\n override val size: Int get() = this@AbstractMutableMap.size\n }\n }\n override fun checkIsMutable(): Unit = this@AbstractMutableMap.checkIsMutable()\n }\n }\n\n return _values!!\n }\n\n actual override fun remove(key: K): V? {\n checkIsMutable()\n val iter = entries.iterator()\n while (iter.hasNext()) {\n val entry = iter.next()\n val k = entry.key\n if (key == k) {\n val value = entry.value\n iter.remove()\n return value\n }\n }\n return null\n }\n\n /**\n * This method is called every time when a mutating method is called on
this mutable map.\n * Mutable maps that are built (frozen) must throw `UnsupportedOperationException`.\n */\n internal open fun checkIsMutable(): Unit {\n }\n\n /**\n * Copyright
2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\npackage
kotlin.collections\n\n/**\n * Provides a skeletal implementation of the [MutableSet] interface.\n */\n * @param E the

```

```

type of elements contained in the set. The set is invariant in its element type.\n */\npublic actual abstract class
AbstractMutableSet<E> protected actual constructor() : AbstractMutableCollection<E>(), MutableSet<E> {\n\n
/**\n * Compares this set with another set instance with the unordered structural equality.\n */\n * @return
`true`, if [other] instance is a [Set] of the same size, all elements of which are contained in this set.\n */\n
override fun equals(other: Any?): Boolean {\n if (other === this) return true\n if (other !is Set<*>) return
false\n return AbstractSet.setEquals(this, other)\n }\n\n /**\n * Returns
the hash code value for this set.\n */\n override fun hashCode(): Int =
AbstractSet.unorderedHashCode(this)\n\n }", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n/**\n * Provides a [MutableList] implementation,
which uses a resizable array as its backing storage.\n */\n * This implementation doesn't provide a way to manage
capacity, as backing JS array is resizeable itself.\n * There is no speed advantage to pre-allocating array sizes in
JavaScript, so this implementation does not include any of the\n * capacity and "growth increment" concepts.\n
*/\n\npublic actual open class ArrayList<E> internal constructor(private var array: Array<Any?>) :
AbstractMutableList<E>(), MutableList<E>, RandomAccess {\n private var isReadOnly: Boolean = false\n\n
/**\n * Creates an empty [ArrayList].\n
*/\n\n public actual constructor() : this(emptyArray()) {\n\n /**\n * Creates an empty [ArrayList].\n */
\n @param initialCapacity initial capacity (ignored)\n */\n public actual constructor(initialCapacity: Int) :
this(emptyArray()) {\n\n /**\n * Creates an [ArrayList] filled from the [elements] collection.\n */\n public
actual constructor(elements: Collection<E>) : this(elements.toTypedArray<Any?>()) {\n\n @PublishedApi\n
internal fun build(): List<E> {\n checkIsMutable()\n isReadOnly = true\n return this\n }\n\n /**
Does nothing in this ArrayList implementation.\n */\n public actual fun trimToSize() {\n\n /** Does nothing in
this ArrayList implementation.\n */\n public actual fun ensureCapacity(minCapacity: Int) {\n\n actual override
val size: Int get() = array.size\n @Suppress("UNCHECKED_CAST")\n actual override fun get(index: Int): E =
array[rangeCheck(index)] as E\n actual override
fun set(index: Int, element: E): E {\n checkIsMutable()\n rangeCheck(index)\n
\n @Suppress("UNCHECKED_CAST")\n return array[index].apply { array[index] = element } as E\n }\n\n
actual override fun add(element: E): Boolean {\n checkIsMutable()\n array.asDynamic().push(element)\n
modCount++\n return true\n }\n\n actual override fun add(index: Int, element: E): Unit {\n
checkIsMutable()\n array.asDynamic().splice(insertionRangeCheck(index), 0, element)\n modCount++\n
}\n\n actual override fun addAll(elements: Collection<E>): Boolean {\n checkIsMutable()\n if
(elements.isEmpty()) return false\n array += elements.toTypedArray<Any?>()\n modCount++\n
return true\n }\n\n actual override fun addAll(index: Int, elements: Collection<E>): Boolean {\n
checkIsMutable()\n insertionRangeCheck(index)\n\n if (index == size) return addAll(elements)\n
if (elements.isEmpty()) return false\n when (index) {\n size -> return addAll(elements)\n 0 ->
array = elements.toTypedArray<Any?>() + array\n else -> array = array.copyOfRange(0,
index).asDynamic().concat(elements.toTypedArray<Any?>(), array.copyOfRange(index, size))\n }\n\n
modCount++\n return true\n }\n\n actual override fun removeAt(index: Int): E {\n checkIsMutable()\n
rangeCheck(index)\n modCount++\n return if (index == lastIndex)\n array.asDynamic().pop()\n
else\n array.asDynamic().splice(index, 1)[0]\n }\n\n actual override fun remove(element: E): Boolean {\n
checkIsMutable()\n for (index in array.indices) {\n if (array[index] == element) {\n
array.asDynamic().splice(index, 1)\n modCount++\n return true\n }\n }\n return
false\n }\n\n override
fun removeRange(fromIndex: Int, toIndex: Int) {\n checkIsMutable()\n modCount++\n
array.asDynamic().splice(fromIndex, toIndex - fromIndex)\n }\n\n actual override fun clear() {\n
checkIsMutable()\n array = emptyArray()\n modCount++\n }\n\n\n actual override fun
indexOf(element: E): Int = array.indexOf(element)\n\n actual override fun lastIndexOf(element: E): Int =
array.lastIndexOf(element)\n\n override fun toString() = arrayToString(array)\n\n

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@Suppress("UNCHECKED_CAST")\n override fun <T> toArray(array: Array<T>): Array<T> {\n if
(array.size < size) {\n return toArray() as Array<T>\n }\n (this.array as
Array<T>).copyInto(array)\n if (array.size > size) {\n array[size] = null as T // null-terminate\n
}\n return array\n }\n override fun toArray(): Array<Any?> {\n return js("[\n]").slice.call(array)\n
}\n internal override
fun checkIsMutable() {\n if (isReadOnly) throw UnsupportedOperationException()\n }\n private fun
rangeCheck(index: Int) = index.apply {\n AbstractList.checkElementIndex(index, size)\n }\n private fun
insertionRangeCheck(index: Int) = index.apply {\n AbstractList.checkPositionIndex(index, size)\n }\n }", "/*\n
* Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\ninternal fun <T> sortArrayWith(array: Array<out T>, comparison: (T, T) -> Int) {\n if
(getStableSortingIsSupported()) {\n array.asDynamic().sort(comparison)\n } else {\n
mergeSort(array.unsafeCast<Array<T>>(), 0, array.lastIndex, Comparator(comparison))\n }\n }\n\ninternal fun
<T> sortArrayWith(array: Array<out T>, comparator: Comparator<in T>) {\n if (getStableSortingIsSupported())
{\n val comparison = { a: T, b: T -> comparator.compare(a, b) }\n array.asDynamic().sort(comparison)\n
} else {\n mergeSort(array.unsafeCast<Array<T>>(), 0, array.lastIndex, comparator)\n }\n }\n\ninternal fun
<T> sortArrayWith(array: Array<out T>, fromIndex: Int, toIndex: Int, comparator: Comparator<in T>) {\n if
(fromIndex < toIndex - 1) {\n mergeSort(array.unsafeCast<Array<T>>(), fromIndex, toIndex - 1, comparator)\n
}\n }\n\ninternal fun <T : Comparable<T>> sortArray(array: Array<out T>) {\n if
(getStableSortingIsSupported()) {\n val comparison = { a: T, b: T -> a.compareTo(b) }\n
array.asDynamic().sort(comparison)\n } else {\n mergeSort(array.unsafeCast<Array<T>>(), 0,
array.lastIndex, naturalOrder())\n }\n }\n\nprivate var _stableSortingIsSupported: Boolean? = null\nprivate fun
getStableSortingIsSupported(): Boolean {\n _stableSortingIsSupported?.let { return it }\n
_stableSortingIsSupported = false\n\n val array = js("[\n]").unsafeCast<Array<Int>>()\n // known implementations may use stable sort for arrays of up to
512 elements\n // so we create slightly more elements to test stability\n for (index in 0 until 600)
array.asDynamic().push(index)\n val comparison = { a: Int, b: Int -> (a and 3) - (b and 3) }\n
array.asDynamic().sort(comparison)\n for (index in 1 until array.size) {\n val a = array[index - 1]\n val b
= array[index]\n if ((a and 3) == (b and 3) && a >= b) return false\n }\n _stableSortingIsSupported = true\n
return true\n }\n\nprivate fun <T> mergeSort(array: Array<T>, start: Int, endInclusive: Int, comparator:
Comparator<in T>) {\n val buffer = arrayOfNulls<Any?>(array.size).unsafeCast<Array<T>>()\n val result =
mergeSort(array, buffer, start, endInclusive, comparator)\n if (result !== array) {\n for (i in start..endInclusive)
array[i] = result[i]\n }\n }\n\n// Both start and end are inclusive indices.\nprivate
fun <T> mergeSort(array: Array<T>, buffer: Array<T>, start: Int, end: Int, comparator: Comparator<in T>):
Array<T> {\n if (start == end) {\n return array\n }\n val median = (start + end) / 2\n val left =
mergeSort(array, buffer, start, median, comparator)\n val right = mergeSort(array, buffer, median + 1, end,
comparator)\n val target = if (left === buffer) array else buffer\n // Merge.\n var leftIndex = start\n var
rightIndex = median + 1\n for (i in start..end) {\n when {\n leftIndex <= median && rightIndex <= end
-> {\n val leftValue = left[leftIndex]\n val rightValue = right[rightIndex]\n if
(comparator.compare(leftValue, rightValue) <= 0) {\n target[i] = leftValue\n leftIndex++\n
} else {\n target[i] = rightValue\n rightIndex++\n }\n
}\n\n leftIndex\n <= median -> {\n target[i] = left[leftIndex]\n leftIndex++\n }\n
}\n <= end */ -> {\n target[i] = right[rightIndex]\n rightIndex++\n }\n Unit // TODO: Fix KT-
31506\n }\n }\n }\n return target\n }", "/*\n
* Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\n@OptIn(ExperimentalUnsignedTypes::class)\n@SinceKotlin("1.3")\n@kotlin.js.JsName("")

```



```

contentDeepHashCodeImpl")\ninternal fun <T> Array<out T>?.contentDeepHashCodeImpl(): Int {\n if (this ==
null) return 0\n var result = 1\n for (element in this) {\n val elementHash = when {\n element == null
-> 0\n isArrayish(element) -> (element.unsafeCast<Array<*>>()).contentDeepHashCodeImpl()\n
 element is UByteArray -> element.contentHashCode()\n element is UShortArray ->
element.contentHashCode()\n element is UIntArray -> element.contentHashCode()\n element is
ULongArray -> element.contentHashCode()\n else -> element.hashCode()\n }\n
result = 31 * result + elementHash\n }\n return result\n}"/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\ninternal interface
EqualityComparator {\n /**\n * Subclasses must override to return a value indicating\n * whether or not two
keys or values are equal.\n */\n abstract fun equals(value1: Any?, value2: Any?): Boolean\n\n /**\n *
Subclasses must override to return the hash code of a given key.\n */\n abstract
fun getHashCode(value: Any?): Int\n\n object HashCode : EqualityComparator {\n override fun
equals(value1: Any?, value2: Any?): Boolean = value1 == value2\n override fun getHashCode(value: Any?):
Int = value?.hashCode() ?: 0\n }\n}"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n/*\n * Based on GWT AbstractHashMap\n * Copyright 2008 Google Inc.\n
*/\n\npackage kotlin.collections\n\nimport kotlin.collections.MutableMap.MutableEntry\n\n/**\n * Hash table based
implementation of the [MutableMap] interface.\n * This implementation makes no guarantees regarding the
order of enumeration of [keys], [values] and [entries] collections.\n */\n\n// Classes that extend HashMap and
implement `build()` (freezing) operation\n// have to make sure mutating methods check `checkIsMutable`\n\npublic
actual
open class HashMap<K, V> : AbstractMutableMap<K, V>, MutableMap<K, V> {\n\n private inner class
EntrySet : AbstractEntrySet<MutableEntry<K, V>, K, V>() {\n\n override fun add(element: MutableEntry<K,
V>): Boolean = throw UnsupportedOperationException("Add is not supported on entries")\n override fun
clear() {\n this@HashMap.clear()\n }\n\n override fun containsEntry(element: Map.Entry<K, V>):
Boolean = this@HashMap.containsEntry(element)\n\n override operator fun iterator():
MutableIterator<MutableEntry<K, V>> = internalMap.iterator()\n\n override fun removeEntry(element:
Map.Entry<K, V>): Boolean {\n if (contains(element)) {\n this@HashMap.remove(element.key)\n
return true\n }\n return false\n }\n\n override val size: Int get() =
this@HashMap.size\n }\n\n /**\n * Internal implementation of the map: either string-based or hashcode-
based.\n *\n * @param internalMap: InternalMap<K, V>\n * @param equality: EqualityComparator\n * internal
constructor(internalMap: InternalMap<K, V>) : super() {\n this.internalMap = internalMap\n this.equality =
internalMap.equality\n }\n\n /**\n * Constructs an empty [HashMap] instance.\n */\n actual constructor()
: this(InternalHashCodeMap(EqualityComparator.HashCode))\n\n /**\n * Constructs an empty [HashMap]
instance.\n * @param initialCapacity the initial capacity (ignored)\n * @param loadFactor the load
factor (ignored)\n * @throws IllegalArgumentException if the initial capacity or load factor are negative\n
*/\n actual constructor(initialCapacity: Int, loadFactor: Float) : this() {\n // This implementation of HashMap
has no need of load factors or capacities.\n require(initialCapacity >= 0) { "Negative initial capacity:
$initialCapacity" }\n require(loadFactor >=
0) { "Non-positive load factor: $loadFactor" }\n }\n\n actual constructor(initialCapacity: Int) :
this(initialCapacity, 0.0f)\n\n /**\n * Constructs an instance of [HashMap] filled with the contents of the
specified [original] map.\n */\n actual constructor(original: Map<out K, V>) : this() {\n
this.putAll(original)\n }\n\n actual override fun clear() {\n internalMap.clear()\n }\n\n structureChanged(this)\n\n actual override fun containsKey(key: K): Boolean =
internalMap.containsKey(key)\n\n actual override fun containsValue(value: V): Boolean = internalMap.any {
equality.equals(it.value, value) }\n\n private var _entries: MutableSet<MutableMap.MutableEntry<K, V>> =

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null\n actual override val entries: MutableSet<MutableMap.MutableEntry<K, V>>\n get() {\n if
(_entries == null) {\n _entries = createEntrySet()\n }\n return _entries!!\n }\n\n internal
open fun createEntrySet():
 MutableSet<MutableMap.MutableEntry<K, V>> = EntrySet()\n\n actual override operator fun get(key: K): V? =
internalMap.get(key)\n\n actual override fun put(key: K, value: V): V? = internalMap.put(key, value)\n\n actual
override fun remove(key: K): V? = internalMap.remove(key)\n\n actual override val size: Int get() =
internalMap.size\n\n}\n\n/**\n * Constructs the specialized implementation of [HashMap] with [String] keys, which
stores the keys as properties of\n * JS object without hashing them.\n */\n\npublic fun <V> stringMapOf(vararg pairs:
Pair<String, V>): HashMap<String, V> {\n return HashMap<String,
V>(InternalStringMap(EqualityComparator.HashCode)).apply { putAll(pairs) }\n}\n\n"/**\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n * Based on GWT HashSet\n *
Copyright 2008 Google Inc.\n */\n\npackage
kotlin.collections\n\n/**\n * The implementation of the [MutableSet] interface, backed by a [HashMap] instance.\n
*/\n\n// Classes that extend HashSet and implement `build()` (freezing) operation\n// have to make sure mutating
methods check `checkIsMutable`.\n\npublic actual open class HashSet<E> : AbstractMutableSet<E>, MutableSet<E>
{\n\n internal val map: HashMap<E, Any>\n\n /**\n * Constructs a new empty [HashSet].\n */\n\n actual
constructor() {\n map = HashMap<E, Any>()\n }\n\n /**\n * Constructs a new [HashSet] filled with the
elements of the specified collection.\n */\n\n actual constructor(elements: Collection<E>) {\n map =
HashMap<E, Any>(elements.size)\n addAll(elements)\n }\n\n /**\n * Constructs a new empty
[HashSet].\n */\n\n * @param initialCapacity the initial capacity (ignored)\n * @param loadFactor the load
factor (ignored)\n */\n\n * @throws IllegalArgumentException if the initial
capacity or load factor are negative\n */\n\n actual constructor(initialCapacity: Int, loadFactor: Float) {\n
map = HashMap<E, Any>(initialCapacity, loadFactor)\n }\n\n actual constructor(initialCapacity: Int) :
this(initialCapacity, 0.0f)\n\n /**\n * Protected constructor to specify the underlying map. This is used by\n
*/\n\n * LinkedHashSet.\n */\n\n * @param map underlying map to use.\n */\n\n internal constructor(map: HashMap<E,
Any>) {\n this.map = map\n }\n\n actual override fun add(element: E): Boolean {\n val old =
map.put(element, this)\n return old == null\n }\n\n actual override fun clear() {\n map.clear()\n }\n\n//
public override fun clone(): Any {\n// return HashSet<E>(this)\n// }\n\n actual override operator fun
contains(element: E): Boolean = map.containsKey(element)\n\n actual override fun isEmpty(): Boolean =
map.isEmpty()\n\n actual override fun iterator(): MutableIterator<E>
= map.keys.iterator()\n\n actual override fun remove(element: E): Boolean = map.remove(element) != null\n\n\n
actual override val size: Int get() = map.size\n\n}\n\n/**\n * Creates a new instance of the specialized
implementation of [HashSet] with the specified [String] elements,\n * which elements the keys as properties of JS
object without hashing them.\n */\n\npublic fun stringSetOf(vararg elements: String): HashSet<String> {\n return
HashSet(stringMapOf<Any>()).apply { addAll(elements) }\n}\n\n"/**\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n * Based on GWT InternalHashCodeMap\n * Copyright
2008 Google Inc.\n */\n\npackage kotlin.collections\n\nimport
kotlin.collections.MutableMap.MutableEntry\nimport kotlin.collections.AbstractMutableMap.SimpleEntry\n\n/**\n
* A simple wrapper around JavaScriptObject to provide
[java.util.Map]-like semantics for any\n * key type.\n */\n\n * Implementation notes:\n * A key's hashCode
is the index in backingMap which should contain that key. Since several keys may\n * have the same hash, each
value in hashCodeMap is actually an array containing all entries whose\n * keys share the same hash.\n */\n\ninternal
class InternalHashCodeMap<K, V>(override val equality: EqualityComparator) : InternalMap<K, V> {\n\n private var
backingMap: dynamic = createJsMap()\n override var size: Int = 0\n private set\n\n override fun
put(key: K, value: V): V? {\n val hashCode = equality.getHashCode(key)\n val chainOrEntry =
getChainOrEntryOrNull(hashCode)\n if (chainOrEntry == null) {\n // This is a new chain, put it to the

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map.\n backingMap[hashCode] = SimpleEntry(key, value)\n } else {\n if (chainOrEntry !is
Array<*>) {\n // It is an entry\n val entry: SimpleEntry<K,
V> = chainOrEntry\n if (equality.equals(entry.key, key)) {\n return entry.setValue(value)\n
 } else {\n backingMap[hashCode] = arrayOf(entry, SimpleEntry(key, value))\n
size++\n return null\n }\n } else {\n // Chain already exists, perhaps key also
exists.\n val chain: Array<MutableEntry<K, V>> = chainOrEntry\n val entry =
chain.findEntryInChain(key)\n if (entry != null) {\n return entry.setValue(value)\n }\n chain.asDynamic().push(SimpleEntry(key, value))\n size++\n//
structureChanged(host)\n return null\n }\n override fun remove(key: K): V? {\n val hashCode =
equality.getHashCode(key)\n val chainOrEntry = getChainOrEntryOrNull(hashCode) ?: return null\n if
(chainOrEntry
!is Array<*>) {\n val entry: MutableEntry<K, V> = chainOrEntry\n if (equality.equals(entry.key,
key)) {\n jsDeleteProperty(backingMap, hashCode)\n size--\n return entry.value\n
} else {\n return null\n }\n } else {\n val chain: Array<MutableEntry<K, V>> =
chainOrEntry\n for (index in chain.indices) {\n val entry = chain[index]\n if
(equality.equals(key, entry.key)) {\n if (chain.size == 1) {\n chain.asDynamic().length =
0\n // remove the whole array\n jsDeleteProperty(backingMap, hashCode)\n
} else {\n // splice out the entry we're removing\n chain.asDynamic().splice(index, 1)\n
}\n size--\n//
structureChanged(host)\n return entry.value\n }\n }\n return null\n }\n override fun clear() {\n
backingMap = createJsMap()\n size = 0\n }\n override fun contains(key: K): Boolean = getEntry(key) !=
null\n override fun get(key: K): V? = getEntry(key)?.value\n private fun getEntry(key: K): MutableEntry<K,
V>? {\n val chainOrEntry = getChainOrEntryOrNull(equality.getHashCode(key)) ?: return null\n if
(chainOrEntry !is Array<*>) {\n val entry: MutableEntry<K, V> = chainOrEntry\n if
(equality.equals(entry.key, key)) {\n return entry\n } else {\n return null\n }\n }
else {\n val chain: Array<MutableEntry<K, V>> = chainOrEntry\n return
chain.findEntryInChain(key)\n }\n }\n private fun Array<MutableEntry<K, V>>.findEntryInChain(key:
K): MutableEntry<K, V>? =\n firstOrNull { entry ->
equality.equals(entry.key, key) }\n override fun iterator(): MutableIterator<MutableEntry<K, V>> {\n
return object : MutableIterator<MutableEntry<K, V>> {\n var state = -1 // -1 not ready, 0 - ready, 1 -
done\n val keys: Array<String> = js("Object").keys(backingMap)\n var keyIndex = -1\n var
chainOrEntry: dynamic = null\n var isChain = false\n var itemIndex = -1\n var lastEntry:
MutableEntry<K, V>? = null\n private fun computeNext(): Int {\n if (chainOrEntry != null &&
isChain) {\n val chainSize: Int = chainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>().size\n
if (++itemIndex < chainSize)\n return 0\n }\n if (++keyIndex < keys.size)\n {\n chainOrEntry = backingMap[keys[keyIndex]]\n isChain = chainOrEntry is Array<*>\n
\n itemIndex = 0\n return 0\n } else {\n chainOrEntry = null\n return
1\n }\n }\n override fun hasNext(): Boolean {\n if (state == -1)\n state = computeNext()\n return state == 0\n }\n override fun next(): MutableEntry<K, V> {\n
if (!hasNext()) throw NoSuchElementException()\n val lastEntry = if (isChain) {\n
chainOrEntry.unsafeCast<Array<MutableEntry<K, V>>>()[itemIndex]\n } else {\n
chainOrEntry.unsafeCast<MutableEntry<K, V>>()\n }\n this.lastEntry = lastEntry\n
state = -1\n return lastEntry\n }\n override fun remove() {\n
checkNotNull(lastEntry)\n this@InternalHashCodeMap.remove(lastEntry!!.key)\n
lastEntry = null\n // the chain being iterated just got modified by InternalHashCodeMap.remove\n
itemIndex--\n }\n }\n }\n private fun getChainOrEntryOrNull(hashCode: Int): dynamic {\n
val chainOrEntry = backingMap[hashCode]\n return if (chainOrEntry === undefined) null else chainOrEntry\n
}

```



```

LinkedHashMap\n * Copyright 2008 Google Inc.\n *\npackage kotlin.collections\n\nimport
kotlin.collections.MutableMap.MutableEntry\n\n/**\n * Hash table based implementation of the [MutableMap]
interface, which additionally preserves the insertion order\n * of entries during the iteration.\n *\n * The insertion
order is preserved by maintaining a doubly-linked list of all of its entries.\n *\npublic actual open class
LinkedHashMap<K, V> : HashMap<K, V>, MutableMap<K, V> {\n\n /**\n * The entry we use includes
next/prev pointers for a doubly-linked
circular\n * list with a head node. This reduces the special cases we have to deal with\n * in the list
operations.\n\n * Note that we duplicate the key from the underlying hash map so we can find\n * the eldest
entry. The alternative would have been to modify HashMap so more\n * of the code was directly usable here, but
this would have added some\n * overhead to HashMap, or to reimplement most of the HashMap code here with\n
 * small modifications. Paying a small storage cost only if you use\n * LinkedHashMap and minimizing code size
seemed like a better tradeoff\n *\n private inner class ChainEntry<K, V>(key: K, value: V) :
AbstractMutableMap.SimpleEntry<K, V>(key, value) {\n internal var next: ChainEntry<K, V>? = null\n
 internal var prev: ChainEntry<K, V>? = null\n override fun setValue(newValue: V): V {\n
 this@LinkedHashMap.checkIsMutable()\n return super.setValue(newValue)\n }\n
 }\n\n private inner class EntrySet : AbstractEntrySet<MutableEntry<K, V>, K, V>() {\n private inner
class EntryIterator : MutableIterator<MutableEntry<K, V>> {\n // The last entry that was returned from this
iterator.\n private var last: ChainEntry<K, V>? = null\n // The next entry to return from this
iterator.\n private var next: ChainEntry<K, V>? = null\n init {\n next = head\n
 }\n recordLastKnownStructure(map, this)\n override fun hasNext(): Boolean {\n return
next != null\n }\n override fun next(): MutableEntry<K, V> {\n
 checkStructuralChange(map, this)\n if (!hasNext()) throw NoSuchElementException()\n val
current = next!!\n last = current\n next = current.next.takeIf { it != head }\n return
current\n }\n\n override fun remove() {\n check(last != null)\n this@EntrySet.checkIsMutable()\n
 checkStructuralChange(map, this)\n last!!.remove()\n map.remove(last!!.key)\n
 recordLastKnownStructure(map, this)\n last = null\n }\n override fun add(element:
MutableEntry<K, V>): Boolean = throw UnsupportedOperationException("Add is not supported on entries")\n
 override fun clear() {\n this@LinkedHashMap.clear()\n }\n override fun containsEntry(element:
Map.Entry<K, V>): Boolean = this@LinkedHashMap.containsEntry(element)\n override operator fun
iterator(): MutableIterator<MutableEntry<K, V>> = EntryIterator()\n override fun removeEntry(element:
Map.Entry<K, V>): Boolean {\n checkIsMutable()\n if (contains(element)) {\n
 this@LinkedHashMap.remove(element.key)\n }\n return true\n }\n return false\n }\n override val size: Int get() =
this@LinkedHashMap.size\n override fun checkIsMutable(): Unit =
this@LinkedHashMap.checkIsMutable()\n }\n\n /**\n * The head of the insert order chain, which is a doubly-
linked circular\n * list.\n *\n * The most recently inserted node is at the end of the chain, ie.\n * chain.prev.\n *\n private var head: ChainEntry<K, V>? = null\n\n /**\n * Add this node to the end of the chain.\n *\n private fun ChainEntry<K, V>.addToEnd() {\n // This entry is not in the list.\n check(next == null && prev
== null)\n val _head = head\n if (_head == null) {\n head = this\n next = this\n prev =
this\n } else {\n // Chain is valid.\n val _tail = checkNotNull(_head.prev)\n // Update me.\n prev = _tail\n next = _head\n
 // Update my new siblings: current head and old tail\n _head.prev = this\n _tail.next = this\n
 }\n }\n\n /**\n * Remove this node from the chain it is a part of.\n *\n private fun ChainEntry<K,
V>.remove() {\n if (this.next === this) {\n // if this is single element, remove head\n head = null\n
 } else {\n if (head === this) {\n // if this is first element, move head to next\n head =
next\n }\n next!!.prev = prev\n prev!!.next = next\n next = null\n prev = null\n
 }\n }\n\n /**\n * The hashmap that keeps track of our entries and the chain. Note that we\n * duplicate the key here

```



```

}

/**
 * Creates a new instance of the specialized implementation of [LinkedHashSet] with the specified
 [String] elements, which elements the keys as properties of JS object without hashing them.
 */
@public fun
linkedStringSetOf(vararg elements: String): LinkedHashSet<String> {
 return
 LinkedHashSet(linkedStringMapOf<>()).apply {
 addAll(elements)
 }
}

/*
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 Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
@package kotlin
@import
kotlin.contracts.*
@DeprecatedSinceKotlin(warningSince = "1.6")
@Deprecated("Synchronization on any
object is not supported in Kotlin/JS",
ReplaceWith("run(block)"))
@kotlin.internal.InlineOnly
@Suppress("UNUSED_PARAMETER")
@public
inline fun <R> synchronized(lock: Any, block: () -> R): R {
 contract {
 callsInPlace(block,
 InvocationKind.EXACTLY_ONCE)
 }
 return block()
}

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 license/LICENSE.txt file.
 */
@package kotlin.io
@internal
abstract class BaseOutput {
 open fun println() {
 print("\n")
 }
 open fun println(message: Any?) {
 print(message)
 println()
 }
}
abstract fun print(message: Any?)
open fun flush() {}

/** JsName used to make the declaration
available outside of module to test it */
@JsName("NodeJsOutput")
@internal
class NodeJsOutput(val
outputStream: dynamic) : BaseOutput() {
 override fun print(message: Any?) {
 // TODO: Using local
variable because of bug in block decomposition lowering in IR backend
 val messageString =
String(message)
 outputStream.write(messageString)
 }
}

/** JsName used to make the declaration
available outside of module to test it */
@JsName("OutputToConsoleLog")
@internal
class OutputToConsoleLog
: BaseOutput() {
 override fun print(message: Any?) {
 console.log(message)
 }
 override fun
println(message: Any?) {
 console.log(message)
 }
 override fun println() {
 console.log("")
 }
}

/** JsName used to make the declaration available outside of module to test it and use at try.kotl.in
*/
@JsName("BufferedOutput")
@internal
open class BufferedOutput : BaseOutput() {
 var buffer = ""
 override fun print(message: Any?) {
 buffer += String(message)
 }
 override fun flush() {
 buffer
= ""
 }
}

/** JsName used to make the declaration available outside of module to test it
*/
@JsName("BufferedOutputToConsoleLog")
@internal
class BufferedOutputToConsoleLog : BufferedOutput() {
 override fun print(message: Any?) {
 var s = String(message)
 val
i = s.nativeLastIndexOf("\n", 0)
 if (i >= 0) {
 buffer += s.substring(0, i)
 flush()
 s =
s.substring(i + 1)
 }
 buffer += s
 }
 override fun flush() {
 console.log(buffer)
 buffer
= ""
 }
}

/** JsName used to make the declaration available outside of module to test it and use at
try.kotl.in */
@JsName("output")
@internal
var output = run {
 val isNode: Boolean = js("typeof process !==
'undefined' && process.versions && !process.versions.node")
 if (isNode) NodeJsOutput(js("process.stdout"))
else BufferedOutputToConsoleLog()
}

@kotlin.internal.InlineOnly
@private
inline fun String(value: Any?):
String = js("String")(value)

/** Prints the line separator to the standard output stream.
*/
@public
actual fun
println() {
 output.println()
}

/** Prints the given [message] and the line separator to the standard output
stream.
*/
@public
actual fun println(message:
Any?) {
 output.println(message)
}

/** Prints the given [message] to the standard output stream.
*/
@public
actual fun print(message: Any?) {
 output.print(message)
}

@SinceKotlin("1.6")
@public
actual fun
readln(): String = throw UnsupportedOperationException("readln is not supported in
Kotlin/JS")
@SinceKotlin("1.6")
@public
actual fun readlnOrNull(): String? = throw
UnsupportedOperationException("readlnOrNull is not supported in Kotlin/JS")

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 Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
@package kotlin.coroutines
@import
kotlin.coroutines.intrinsics.*
@import
kotlin.coroutines.intrinsics.COROUTINE_SUSPENDED
@PublishedApi
@SinceKotlin("1.3")
@internal
actual class SafeContinuation<in T>
@internal
actual constructor(
 private val delegate: Continuation<T>,

```





```

now(): Double\n\n
 public fun parse(dateString: String): Double\n\n public fun UTC(year: Int, month: Int): Double\n\n
public fun UTC(year: Int, month: Int, day: Int): Double\n\n public fun UTC(year: Int, month: Int, day: Int, hour:
Int): Double\n\n public fun UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int): Double\n\n public
fun UTC(year: Int, month: Int, day: Int, hour: Int, minute: Int, second: Int): Double\n\n public fun UTC(year:
Int, month: Int, day: Int, hour: Int, minute: Int, second: Int, millisecond: Number): Double\n } \n\n public
interface LocaleOptions { \n public var localeMatcher: String?\n\n public var timeZone: String?\n\n
public var hour12: Boolean?\n\n public var formatMatcher: String?\n\n public var weekday: String?\n\n
public var era: String?\n\n public var year: String?\n\n public var month: String?\n\n public var day:
String?\n\n public var hour: String?\n\n
 public var minute: String?\n\n public var second: String?\n\n public var timeZoneName: String?\n
}\n}\n\npublic inline fun dateLocaleOptions(init: Date.LocaleOptions.() -> Unit): Date.LocaleOptions { \n val
result = js("new Object()").unsafeCast<Date.LocaleOptions>()\n init(result)\n return result\n } , /*\n *
Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * \n\npackage
kotlin.dom\n\nimport org.w3c.dom.Document\nimport org.w3c.dom.Element\nimport
kotlin.internal.LowPriorityInOverloadResolution\nimport kotlinx.dom.appendElement as
newAppendElement\nimport kotlinx.dom.createElement as newCreateElement\n\n/**\n * Creates a new element
with the specified [name].\n * \n * The element is initialized with the specified [init] function.\n
*\n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message =
 \"This API is moved to another package, use 'kotlinx.dom.createElement' instead.\",\n replaceWith =
 ReplaceWith(\"this.createElement(name, init)\",
 \"kotlinx.dom.createElement()\")\n)\n * @DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\npublic
inline fun Document.createElement(name: String, noinline init: Element.() -> Unit): Element =
 this.newCreateElement(name, init)\n\n/**\n * Appends a newly created element with the specified [name] to this
element.\n * \n * The element is initialized with the specified [init] function.\n
*\n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message = \"This API is moved to another package,
use 'kotlinx.dom.appendElement' instead.\",\n replaceWith = ReplaceWith(\"this.appendElement(name, init)\",
 \"kotlinx.dom.appendElement()\")\n)\n * @DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\npublic
inline fun Element.appendElement(name: String, noinline init: Element.() -> Unit): Element =
 this.newAppendElement(name,
 init)\n\n\", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\npackage kotlin.dom\n\nimport org.w3c.dom.Element\nimport
kotlin.internal.LowPriorityInOverloadResolution\nimport kotlinx.dom.addClass as newAddClass\nimport
kotlinx.dom.hasClass as newHasClass\nimport kotlinx.dom.removeClass as newRemoveClass\n\n/** Returns true if
the element has the given CSS class style in its 'class' attribute
*\n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message = \"This API is moved to another package,
use 'kotlinx.dom.hasClass' instead.\",\n replaceWith = ReplaceWith(\"this.hasClass(cssClass)\",
 \"kotlinx.dom.hasClass()\")\n)\n * @DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\ninline fun
Element.hasClass(cssClass: String): Boolean = this.newHasClass(cssClass)\n\n/**\n * Adds CSS class to element.
Has no effect
if all specified classes are already in class attribute of the element\n * \n * @return true if at least one class has been
added\n * \n * @LowPriorityInOverloadResolution\n * @Deprecated(\n message = \"This API is moved to another
package, use 'kotlinx.dom.addClass' instead.\",\n replaceWith = ReplaceWith(\"this.addClass(cssClasses)\",
 \"kotlinx.dom.addClass()\")\n)\n * @DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\n\ninline fun
Element.addClass(vararg cssClasses: String): Boolean = this.newAddClass(*cssClasses)\n\n/**\n * Removes all
[cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the element\n * \n *

```

```

@return true if at least one class has been removed\n */\n@LowPriorityInOverloadResolution\n@Deprecated(\n
message = \"This API is moved to another package, use 'kotlinx.dom.removeClass' instead.\",\n replaceWith =
ReplaceWith(\"this.removeClass(cssClasses)\",
\"kotlinx.dom.removeClass\")\n)\n@DeprecatedSinceKotlin(warningSince
= \"1.4\", errorSince = \"1.6\")\ninline fun Element.removeClass(vararg cssClasses: String): Boolean =
this.newRemoveClass(*cssClasses),\"/>\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.dom\n\nimport org.w3c.dom.Element\nimport
org.w3c.dom.Node\nimport kotlin.internal.LowPriorityInOverloadResolution\nimport kotlinx.dom.isElement as
newIsElement\nimport kotlinx.dom.isText as newIsText\n\n/**\n * Gets a value indicating whether this node is a
TEXT_NODE or a CDATA_SECTION_NODE.\n */\n@LowPriorityInOverloadResolution\n@Deprecated(\n
message = \"This API is moved to another package, use 'kotlinx.dom.isText' instead.\",\n replaceWith =
ReplaceWith(\"this.isText\", \"kotlinx.dom.isText\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\",
errorSince = \"1.6\")\npublic val Node.isText: Boolean\n
 inline get() = this.newIsText\n\n/**\n * Gets a value indicating whether this node is an [Element].\n
*/\n@LowPriorityInOverloadResolution\n@Deprecated(\n message = \"This API is moved to another package,
use 'kotlinx.dom.isElement' instead.\",\n replaceWith = ReplaceWith(\"this.isElement\",
\"kotlinx.dom.isElement\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\npublic val
Node.isElement: Boolean\n inline get() = this.newIsElement\n\n\"/>\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\npackage org.w3c.dom.events\n\npublic fun
EventListener(handler: (Event) -> Unit): EventListener = EventListenerHandler(handler)\n\nprivate class
EventListenerHandler(private val handler: (Event) -> Unit) : EventListener {\n public override fun
handleEvent(event: Event) {\n handler(event)\n
 }\n\n public override fun toString(): String = \"EventListenerHandler($handler)\"\n}\n\n\"/>\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage org.w3c.dom\n\npublic
external interface ItemArrayLike<out T> {\n val length: Int\n fun item(index: Int): T?\n}\n\n/**\n * Returns the
view of this `ItemArrayLike<T>` collection as `List<T>`\n */\n\npublic fun <T> ItemArrayLike<T>.asList(): List<T>
= object : AbstractList<T>() {\n override val size: Int get() = this@asList.length\n\n override fun get(index: Int):
T = when (index) {\n in 0..lastIndex -> this@asList.item(index).unsafeCast<T>()\n else -> throw
IndexOutOfBoundsException(\"index $index is not in range [0..$lastIndex]\")\n }\n}\n\n\"/>\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source
code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.dom\n\nimport org.w3c.dom.Element\nimport org.w3c.dom.Node\nimport
kotlin.internal.LowPriorityInOverloadResolution\nimport kotlinx.dom.appendText as newAppendText\nimport
kotlinx.dom.clear as newClear\n\n/**\n * Removes all the children from this node.\n
*/\n@LowPriorityInOverloadResolution\n@Deprecated(\n message = \"This API is moved to another package,
use 'kotlinx.dom.clear' instead.\",\n replaceWith = ReplaceWith(\"this.clear()\",
\"kotlinx.dom.clear\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\npublic inline fun
Node.clear() = this.newClear()\n\n/**\n * Creates text node and append it to the element.\n */\n\n * @return this
element\n */\n@LowPriorityInOverloadResolution\n@Deprecated(\n message = \"This API is moved to another
package, use 'kotlinx.dom.appendText' instead.\",\n replaceWith = ReplaceWith(\"this.appendText(text)\",
\"kotlinx.dom.appendText\")\n)\n@DeprecatedSinceKotlin(warningSince = \"1.4\", errorSince = \"1.6\")\ninline fun
Element.appendText(text: String): Element = this.newAppendText(text)\n\n\"/>\n * Copyright 2010-2018 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.js\n\n/**\n * Reinterprets this value
as a value of the [dynamic type](/docs/reference/dynamic-type.html).\n */\n@kotlin.internal.InlineOnly\npublic

```

```

inline fun Any?.asDynamic(): dynamic = this\n\n/**\n * Reinterprets this value as a value of the specified type [T]
without any actual type checking.\n */\n@kotlin.internal.InlineOnly\npublic inline fun <T> Any?.unsafeCast():
@kotlin.internal.NoInfer T = this.asDynamic()\n\n/**\n * Reinterprets this `dynamic` value as a value of the
specified type [T] without any actual type checking.\n
*/\n@kotlin.internal.DynamicExtension\n@JsName("unsafeCastDynamic")\n@kotlin.internal.InlineOnly\npublic
inline fun <T> dynamic.unsafeCast(): @kotlin.internal.NoInfer T = this\n\n/**\n * Allows to iterate this `dynamic`
object in the following cases:\n * - when it has an `iterator` function,\n * - when it is an array\n * - when it is an
instance of [kotlin.collections.Iterable]\n */\n@kotlin.internal.DynamicExtension\npublic operator fun
dynamic.iterator(): Iterator<dynamic> {\n val r: Any? = this\n\n return when {\n this["iterator"] != null -
->\n this["iterator"]()\n isArrayish(r) ->\n r.unsafeCast<Array<*>>().iterator()\n else ->\n (r as Iterable<*>).iterator()\n }\n}\n", "/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.enums\n\n// Unused stub\ninternal actual class
EnumEntriesSerializationProxy<E
: Enum<E>> actual constructor(entries: Array<E>)\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n// a package is omitted to get declarations directly under the
module\n\n@JsName("throwNPE")\ninternal fun throwNPE(message: String) {\n throw
NullPointerException(message)\n}\n\n@JsName("throwCCE")\ninternal fun throwCCE() {\n throw
ClassCastException("Illegal cast")\n}\n\n@JsName("throwISE")\ninternal fun throwISE(message: String) {\n
 throw IllegalStateException(message)\n}\n\n@JsName("throwUPAE")\ninternal fun throwUPAE(propertyName:
String) {\n throw UninitializedPropertyAccessException("lateinit property ${propertyName} has not been
initialized")\n}\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\n/**\n * Groups elements from the [Grouping] source by key and counts elements in each
group.\n */\n * @return a [Map] associating the key of each group with the count of elements in the group.\n */\n *
@sample samples.collections.Grouping.groupingByEachCount\n */\n@SinceKotlin("1.1")\npublic actual fun <T,
K> Grouping<T, K>.eachCount(): Map<K, Int> =\n fold(0) { acc, _ -> acc + 1 }\n\n/**\n * Groups elements
from the [Grouping] source by key and sums values provided by the [valueSelector] function for elements in each
group.\n */\n * @return a [Map] associating the key of each group with the count of element in the group.\n
*/\n@SinceKotlin("1.1")\npublic inline fun <T, K> Grouping<T, K>.eachSumOf(valueSelector: (T) -> Int):
Map<K, Int> =\n fold(0) { acc, e -> acc + valueSelector(e) }\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o.
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Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("GroupingKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage
kotlin.collections\n\n/**\n * Represents a source of elements with a [keyOf] function, which can be applied to each
element to get its key.\n */\n * A [Grouping] structure serves as an intermediate step in group-and-fold operations:\n
* they group elements by their keys and then fold each group with some aggregating operation.\n */\n * It is created
by attaching `keySelector: (T) -> K` function to a source of elements.\n * To get an instance of [Grouping] use one
of `groupingBy` extension functions:\n * - [Iterable.groupingBy]\n * - [Sequence.groupingBy]\n * -
[Array.groupingBy]\n * - [CharSequence.groupingBy]\n */\n * For the list of group-and-fold operations available,
see the [extension functions](#extension-functions) for `Grouping`.\n */\n@SinceKotlin("1.1")\npublic
interface Grouping<T, out K> {\n /** Returns an [Iterator] over the elements of the source of this grouping. */\n
fun sourceIterator(): Iterator<T>\n /** Extracts the key of an [element]. */\n fun keyOf(element: T):
K\n}\n\n/**\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each
group sequentially,\n * passing the previously accumulated value and the current element as arguments, and stores

```

the results in a new map.  
 \* The key for each element is provided by the [Grouping.keyOf] function.  
 \* @param operation function is invoked on each element with the following parameters:  
 \* - `key`: the key of the group this element belongs to;  
 \* - `accumulator`: the current value of the accumulator of the group, can be `null` if it's the first `element` encountered in the group;  
 \* - `element`: the element from the source being aggregated;  
 \* - `first`: indicates whether it's the first `element` encountered in the group.  
 \* @return a [Map] associating the key of each group with the result of aggregation of the group elements.  
 \* @sample samples.collections.Grouping.aggregateByRadix

```

 @SinceKotlin("1.1")
 public inline fun <T, K, R> Grouping<T, K>.aggregate(
 operation: (key: K, accumulator: R?, element: T, first: Boolean) -> R
): Map<K, R> {
 return aggregateTo(mutableMapOf<K, R>(), operation)
 }

```

\* Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially, passing the previously accumulated value and the current element as arguments, and stores the results in the given [destination] map.  
 \* The key for each element is provided by the [Grouping.keyOf] function.  
 \* @param operation a function that is invoked on each element with the following parameters:  
 \* - `key`: the key of the group this element belongs to;  
 \* - `accumulator`: the current value of the accumulator of the group, can be `null` if it's the first `element` encountered in the group;  
 \* - `element`: the element from the source being aggregated;  
 \* - `first`: indicates whether it's the first `element` encountered in the group.  
 \* If the [destination] map already has a value corresponding to some key, then the elements being aggregated for that key are never considered as `first`.  
 \* @return the [destination] map associating the key of each group with the result of aggregation of the group elements.  
 \* @sample samples.collections.Grouping.aggregateByRadixTo

```

 @SinceKotlin("1.1")
 public inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.aggregateTo(
 destination: M,
 operation: (key: K, accumulator: R?, element: T, first: Boolean) -> R
): M {
 for (e in this.sourceIterator()) {
 val key = keyOf(e)
 val accumulator = destination[key]
 destination[key] = operation(key, accumulator, e, accumulator == null && !destination.containsKey(key))
 }
 return destination
 }

```

\* Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially, passing the previously accumulated value and the current element as arguments, and stores the results in a new map.  
 \* An initial value of accumulator is provided by [initialValueSelector] function.  
 \* @param initialValueSelector a function that provides an initial value of accumulator for each group.  
 \* It's invoked with parameters:  
 \* - `key`: the key of the group;  
 \* - `element`: the first element being encountered in that group.  
 \* @param operation a function that is invoked on each element with the following parameters:  
 \* - `key`: the key of the group this element belongs to;  
 \* - `accumulator`: the current value of the accumulator of the group;  
 \* - `element`: the element from the source being accumulated.  
 \* @return a [Map] associating the key of each group with the result of accumulating the group elements.  
 \* @sample samples.collections.Grouping.foldByEvenLengthWithComputedInitialValue

```

 @SinceKotlin("1.1")
 public inline fun <T, K, R> Grouping<T, K>.fold(
 initialValueSelector: (key: K, element: T) -> R,
 operation: (key: K, accumulator: R, element: T) -> R
): Map<K, R> =
 @Suppress("UNCHECKED_CAST")
 aggregate {
 key, acc, e, first -> operation(key, if (first) initialValueSelector(key, e) else acc as R, e)
 }

```

\* Groups elements from the [Grouping] source by key and applies [operation] to the elements of each group sequentially, passing the previously accumulated value and the current element as arguments, and stores the results in the given [destination] map.  
 \* An initial value of accumulator is provided by [initialValueSelector] function.  
 \* @param initialValueSelector a function that provides an initial value of accumulator for each group.  
 \* It's invoked with parameters:  
 \* - `key`: the key of the group;  
 \* - `element`: the first element being encountered in that group.  
 \* If the [destination] map already has a value corresponding to some key, that value is used as an initial value of the accumulator for that group and the [initialValueSelector] function is not called for that group.  
 \* @param operation a function that is invoked on each element with the following parameters:  
 \* - `key`: the key of the group this element belongs to;  
 \* - `accumulator`: the current value of the accumulator of the group;  
 \* - `element`: the element from the source being accumulated.  
 \* @return the [destination] map associating the key of each group with the result of

```

accumulating the group elements.\n * @sample
samples.collections.Grouping.foldByEvenLengthWithComputedInitialValueTo\n *^\n@SinceKotlin("1.1")\npublic
inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n destination: M,\n
initialValueSelector: (key: K, element: T) -> R,\n operation:
(key: K, accumulator: R, element: T) -> R)\n @Suppress("UNCHECKED_CAST")\n
aggregateTo(destination) { key, acc, e, first -> operation(key, if (first) initialValueSelector(key, e) else acc as R, e)
}\n\n/**\n * Groups elements from the [Grouping] source by key and applies [operation] to the elements of each
group sequentially,\n * passing the previously accumulated value and the current element as arguments, and stores
the results in a new map.\n * An initial value of accumulator is the same [initialValue] for each group.\n *\n *
@param operation a function that is invoked on each element with the following parameters:\n * - `accumulator`:
the current value of the accumulator of the group;\n * - `element`: the element from the source being
accumulated.\n *\n * @return a [Map] associating the key of each group with the result of accumulating the group
elements.\n * @sample samples.collections.Grouping.foldByEvenLengthWithConstantInitialValue\n
*^\n@SinceKotlin("1.1")\npublic
inline fun <T, K, R> Grouping<T, K>.fold(\n initialValue: R,\n operation: (accumulator: R, element: T) ->
R)\n @Suppress("UNCHECKED_CAST")\n aggregate { _, acc, e, first -> operation(if (first)
initialValue else acc as R, e) }\n\n/**\n * Groups elements from the [Grouping] source by key and applies
[operation] to the elements of each group sequentially,\n * passing the previously accumulated value and the current
element as arguments,\n * and stores the results in the given [destination] map.\n * An initial value of accumulator
is the same [initialValue] for each group.\n *\n * If the [destination] map already has a value corresponding to the key
of some group,\n * that value is used as an initial value of the accumulator for that group.\n *\n * @param operation
a function that is invoked on each element with the following parameters:\n * - `accumulator`: the current value of
the accumulator of the group;\n * - `element`: the element from
the source being accumulated.\n *\n * @return the [destination] map associating the key of each group with the
result of accumulating the group elements.\n * @sample
samples.collections.Grouping.foldByEvenLengthWithConstantInitialValueTo\n *^\n@SinceKotlin("1.1")\npublic
inline fun <T, K, R, M : MutableMap<in K, R>> Grouping<T, K>.foldTo(\n destination: M,\n initialValue: R,\n
operation: (accumulator: R, element: T) -> R)\n @Suppress("UNCHECKED_CAST")\n
aggregateTo(destination) { _, acc, e, first -> operation(if (first) initialValue else acc as R, e) }\n\n/**\n * Groups
elements from the [Grouping] source by key and applies the reducing [operation] to the elements of each group\n *
sequentially starting from the second element of the group,\n * passing the previously accumulated value and the
current element as arguments,\n * and stores the results in a new map.\n * An initial value of accumulator is the first
element of the group.\n *\n * @param operation a
function that is invoked on each subsequent element of the group with the following parameters:\n * - `key`: the
key of the group this element belongs to;\n * - `accumulator`: the current value of the accumulator of the group;\n *
- `element`: the element from the source being accumulated.\n *\n * @return a [Map] associating the key of each
group with the result of accumulating the group elements.\n * @sample
samples.collections.Grouping.reduceByMaxVowels\n *^\n@SinceKotlin("1.1")\npublic inline fun <S, T : S, K>
Grouping<T, K>.reduce(\n operation: (key: K, accumulator: S, element: T) -> S)\n @Suppress("UNCHECKED_CAST")\n
aggregate {
key, acc, e, first ->\n @Suppress("UNCHECKED_CAST")\n if (first) e else operation(key, acc as S, e)\n
}\n\n/**\n * Groups elements from the [Grouping] source by key and applies the reducing [operation] to the
elements of each group\n * sequentially starting from the second element of the group,\n * passing the previously
accumulated value and
the current element as arguments,\n * and stores the results in the given [destination] map.\n * An initial value of
accumulator is the first element of the group.\n *\n * If the [destination] map already has a value corresponding to
the key of some group,\n * that value is used as an initial value of the accumulator for that group and the first
element of that group is also\n * subjected to the [operation].\n *\n * @param operation a function that is invoked on
each subsequent element of the group with the following parameters:\n * - `accumulator`: the current value of the

```



```

js("{}")\n for ((name, value) in pairs) {\n res[name] = value\n } \n return res\n}\n\n**\n * Adds key-
value pairs from [other] to [this].\n * Returns the original receiver.\n */\npublic fun Json.add(other: Json): Json {\n
val keys: Array<String> = js("Object").keys(other)\n for (key in keys) {\n if
(other.asDynamic().hasOwnProperty(key)) {\n this[key] = other[key];\n }\n }\n return
this\n}\n\n**\n * Exposes the JavaScript [JSON object](https://developer.mozilla.org/en-
US/docs/Web/JavaScript/Reference/Global_Objects/JSON)
to Kotlin.\n */\n@Suppress("NOT_DOCUMENTED")\npublic external object JSON {\n public fun stringify(o:
Any?): String\n public fun stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?): String)\n public fun
stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?)? = definedExternally, space: Int): String\n public fun
stringify(o: Any?, replacer: ((key: String, value: Any?) -> Any?)? = definedExternally, space: String): String\n public fun
stringify(o: Any?, replacer: Array<String>): String\n public fun stringify(o: Any?, replacer:
Array<String>, space: Int): String\n public fun stringify(o: Any?, replacer:
Array<String>, space: String): String\n public fun <T> parse(text: String): T\n public fun <T> parse(text: String,
reviver: ((key: String, value: Any?) -> Any?): T)\n}\n\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\npackage kotlin.math\n\nimport kotlin.internal.InlineOnly\nimport kotlin.js.JsMath as nativeMath\n\n//
region ===== Double Math =====\n\nComputes the sine of the angle [x] given in radians.\n */\n * Special cases:\n * - `sin(NaN|+Inf|-Inf)` is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sin(x: Double): Double =
nativeMath.sin(x)\n\n**\n * Computes the cosine of the angle [x] given in radians.\n */\n * Special cases:\n * -
`cos(NaN|+Inf|-Inf)` is `NaN`\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cos(x: Double):
Double = nativeMath.cos(x)\n\n**\n * Computes the tangent of the angle [x] given in radians.\n */\n * Special cases:\n
* - `tan(NaN|+Inf|-Inf)` is `NaN`\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tan(x:
Double): Double = nativeMath.tan(x)\n\n**\n * Computes the arc sine of the value [x];\n * the returned value is an angle in the range from `-PI/2` to `PI/2`
radians.\n */\n * Special cases:\n * - `asin(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun asin(x: Double): Double =
nativeMath.asin(x)\n\n**\n * Computes the arc cosine of the value [x];\n * the returned value is an angle in the
range from `0.0` to `PI` radians.\n */\n * Special cases:\n * - `acos(x)` is `NaN`, when `abs(x) > 1` or x is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun acos(x: Double): Double =
nativeMath.acos(x)\n\n**\n * Computes the arc tangent of the value [x];\n * the returned value is an angle in the
range from `-PI/2` to `PI/2` radians.\n */\n * Special cases:\n * - `atan(NaN)` is `NaN`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atan(x: Double): Double =
nativeMath.atan(x)\n\n**\n * Returns the angle `theta` of the polar
coordinates `(r, theta)` that correspond\n * to the rectangular coordinates `(x, y)` by computing the arc tangent of
the value [y] / [x];\n * the returned value is an angle in the range from `-PI` to `PI` radians.\n */\n * Special cases:\n
* - `atan2(0.0, 0.0)` is `0.0`\n * - `atan2(0.0, x)` is `0.0` for `x > 0` and `PI` for `x < 0`\n * - `atan2(-0.0, x)` is
`-0.0` for `x > 0` and `-PI` for `x < 0`\n * - `atan2(y, +Inf)` is `0.0` for `0 < y < +Inf` and `-0.0` for `-Inf < y < 0`\n
* - `atan2(y, -Inf)` is `PI` for `0 < y < +Inf` and `-PI` for `-Inf < y < 0`\n * - `atan2(y, 0.0)` is `PI/2` for `y > 0` and
`-PI/2` for `y < 0`\n * - `atan2(+Inf, x)` is `PI/2` for finite `x`\n * - `atan2(-Inf, x)` is `-PI/2` for finite `x`\n * -
`atan2(NaN, x)` and `atan2(y, NaN)` is `NaN`\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
atan2(y: Double, x: Double): Double = nativeMath.atan2(y, x)\n\n**\n * Computes the hyperbolic sine of the value
[x].\n */\n * Special
cases:\n * - `sinh(NaN)` is `NaN`\n * - `sinh(+Inf)` is `+Inf`\n * - `sinh(-Inf)` is `-Inf`\n
*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sinh(x: Double): Double = nativeSinh(x)\n\n**\n * Computes the hyperbolic cosine of the value [x].\n */\n * Special cases:\n
* - `cosh(NaN)` is `NaN`\n * - `cosh(+Inf|-Inf)` is `+Inf`\n */\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun cosh(x: Double):

```





= nativeMath.ceil(x)\n\n/\*\*\n \* Rounds the given value [x] to an integer towards negative infinity.\n \* @return the largest double value that is smaller than or equal to the given value [x] and is a mathematical integer.\n \* \n \* Special cases:\n \* - floor(x) is x where x is NaN or +Inf or -Inf or already a mathematical integer.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun floor(x: Double): Double = nativeMath.floor(x)\n\n/\*\*\n \* Rounds the given value [x] to an integer towards zero.\n \* \n \* @return the value [x] having its fractional part truncated.\n \* \n \* Special cases:\n \* - truncate(x) is x where x is NaN or +Inf or -Inf or already a mathematical integer.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun truncate(x: Double): Double = nativeTrunc(x)\n\n/\*\*\n \* Rounds the given value [x] towards the closest integer with ties rounded towards even integer.\n \* \n \* Special cases:\n \* - round(x) is x where x is NaN or +Inf or -Inf or already a mathematical integer.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual fun round(x: Double): Double {\n if (x % 0.5 != 0.0) {\n return nativeMath.round(x)\n }\n val floor = floor(x)\n return if (floor % 2 == 0.0) floor else ceil(x)\n}\n\n/\*\*\n \* Returns the absolute value of the given value [x].\n \* \n \* Special cases:\n \* - abs(NaN) is NaN\n \* \n \* @see absoluteValue extension property for [Double]\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun abs(x: Double): Double = nativeMath.abs(x)\n\n/\*\*\n \* Returns the sign of the given value [x]:\n \* - -1.0 if the value is negative,\n \* - zero if the value is zero,\n \* - 1.0 if the value is positive\n \* \n \* Special case:\n \* - sign(NaN) is NaN\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sign(x: Double): Double = nativeSign(x)\n\n/\*\*\n \* Returns the smaller of two values.\n \* \n \* If either value is NaN, then the result is NaN.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun min(a: Double, b: Double): Double = nativeMath.min(a, b)\n\n/\*\*\n \* Returns the greater of two values.\n \* \n \* If either value is NaN, then the result is NaN.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun max(a: Double, b: Double): Double = nativeMath.max(a, b)\n\n/\*\*\n \* Returns the cube root of [x]. For any x, cbrt(-x) == -cbrt(x); that is, the cube root of a negative value is the negative of the cube root of that value's magnitude. Special cases:\n \* \n \* Special cases:\n \* - If the argument is NaN, then the result is NaN.\n \* - If the argument is infinite, then the result is an infinity with the same sign as the argument.\n \* - If the argument is zero, then the result is a zero with the same sign as the argument.\n \*/\n@SinceKotlin("1.8")\n@WasExperimental(ExperimentalStdlibApi::class)\n@InlineOnly\npublic actual inline fun cbrt(x: Double): Double = nativeMath.cbrt(x)\n\n/\*\*\n \* Raises this value to the power [x].\n \* \n \* Special cases:\n \* - b.pow(0.0) is 1.0\n \* - b.pow(1.0) == b\n \* - b.pow(NaN) is NaN\n \* - NaN.pow(x) is NaN for x != 0.0\n \* - b.pow(Inf) is NaN for abs(b) == 1.0\n \* - b.pow(x) is NaN for b < 0 and x is finite and not an integer\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.pow(x: Double): Double = nativeMath.pow(this, x)\n\n/\*\*\n \* Raises this value to the integer power [n].\n \* \n \* See the other overload of [pow] for details.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.pow(n: Int): Double = nativeMath.pow(this, n.toDouble())\n\n/\*\*\n \* Returns the absolute value of this value.\n \* \n \* Special cases:\n \* - NaN.absoluteValue is NaN\n \* \n \* @see abs function\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Double.absoluteValue: Double get() = nativeMath.abs(this)\n\n/\*\*\n \* Returns the sign of this value:\n \* - -1.0 if the value is negative,\n \* - zero if the value is zero,\n \* - 1.0 if the value is positive\n \* \n \* Special case:\n \* - NaN.sign is NaN\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline val Double.sign: Double get() = nativeSign(this)\n\n/\*\*\n \* Returns this value with the sign bit same as of the [sign] value.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Double.withSign(sign: Int): Double = this.withSign(sign.toDouble())\n\n/\*\*\n \* Returns the ulp (unit in the last place) of this value.\n \* \n \* An ulp is a positive distance between this value and the next nearest [Double] value larger in magnitude.\n \* \n \* Special Cases:\n \* - NaN.ulp is NaN\n \* - x.ulp is +Inf when x is +Inf or -Inf\n \* - 0.0.ulp is Double.MIN\_VALUE\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual val Double.ulp: Double get() = when {\n this < 0 -> (-this).ulp\n this.isNaN() || this == Double.POSITIVE\_INFINITY -> this\n this == Double.MAX\_VALUE -> this - this.nextDown()\n else ->

```

this.nextUp() - this\n\n\n**\n * Returns the [Double] value nearest to this value in direction of positive infinity.\n
*\n@SinceKotlin("1.2")\npublic actual fun Double.nextUp(): Double = when {\n this.isNaN() || this ==
Double.POSITIVE_INFINITY -> this\n this == 0.0 -> Double.MIN_VALUE\n else ->
Double.fromBits(this.toRawBits() + if (this > 0) 1 else -1)\n}\n\n\n**\n * Returns the [Double] value nearest to this
value in direction of negative
infinity.\n *\n@SinceKotlin("1.2")\npublic actual fun Double.nextDown(): Double = when {\n this.isNaN() ||
this == Double.NEGATIVE_INFINITY -> this\n this == 0.0 -> -Double.MIN_VALUE\n else ->
Double.fromBits(this.toRawBits() + if (this > 0) -1 else 1)\n}\n\n\n**\n * Returns the [Double] value nearest to this
value in direction from this value towards the value [to].\n *\n * Special cases:\n * - `x.nextTowards(y)` is `NaN` if
either `x` or `y` are `NaN`\n * - `x.nextTowards(x) == x`\n *\n@SinceKotlin("1.2")\npublic actual fun
Double.nextTowards(to: Double): Double = when {\n this.isNaN() || to.isNaN() -> Double.NaN\n to == this ->
to\n to > this -> this.nextUp()\n else /* to < this */ -> this.nextDown()\n}\n\n\n**\n * Rounds this [Double]
value to the nearest integer and converts the result to [Int].\n *\n * Ties are rounded towards positive infinity.\n *\n *
Special cases:\n * - `x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`\n *
- `x.roundToInt() == Int.MIN_VALUE` when `x < Int.MIN_VALUE`\n *\n * @throws IllegalArgumentException
when this value is `NaN`\n *\n@SinceKotlin("1.2")\npublic actual fun Double.roundToInt(): Int = when {\n
isNaN() -> throw IllegalArgumentException("Cannot round NaN value.")\n this > Int.MAX_VALUE ->
Int.MAX_VALUE\n this < Int.MIN_VALUE -> Int.MIN_VALUE\n else ->
nativeMath.round(this).toInt()\n}\n\n\n**\n * Rounds this [Double] value to the nearest integer and converts the
result to [Long].\n *\n * Ties are rounded towards positive infinity.\n *\n * Special cases:\n * - `x.roundToLong() ==
Long.MAX_VALUE` when `x > Long.MAX_VALUE`\n * - `x.roundToLong() == Long.MIN_VALUE` when `x
< Long.MIN_VALUE`\n *\n * @throws IllegalArgumentException when this value is `NaN`\n
*\n@SinceKotlin("1.2")\npublic actual fun Double.roundToLong(): Long = when {\n isNaN() -> throw
IllegalArgumentException("Cannot round NaN value.")\n this > Long.MAX_VALUE -> Long.MAX_VALUE\n
this
< Long.MIN_VALUE -> Long.MIN_VALUE\n else -> nativeMath.round(this).toLong()\n}\n\n\n//
endregion\n\n\n// region ===== Float Math
=====
\n\n** Computes the sine of the angle [x] given in
radians.\n *\n * Special cases:\n * - `sin(NaN|+Inf|-Inf)` is `NaN`\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sin(x: Float): Float =
nativeMath.sin(x.toDouble()).toFloat()\n\n\n** Computes the cosine of the angle [x] given in radians.\n *\n * Special
cases:\n * - `cos(NaN|+Inf|-Inf)` is `NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun
cos(x: Float): Float = nativeMath.cos(x.toDouble()).toFloat()\n\n\n** Computes the tangent of the angle [x] given in
radians.\n *\n * Special cases:\n * - `tan(NaN|+Inf|-Inf)` is `NaN`\n
*\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun tan(x: Float): Float =
nativeMath.tan(x.toDouble()).toFloat()\n\n\n**\n * Computes the arc sine of the value [x];\n
*\n * the returned value is an angle in the range from `-PI/2` to `PI/2` radians.\n *\n * Special cases:\n * - `asin(x)` is
`NaN`, when `abs(x) > 1` or x is `NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun asin(x:
Float): Float = nativeMath.asin(x.toDouble()).toFloat()\n\n\n**\n * Computes the arc cosine of the value [x];\n
*\n * the returned value is an angle in the range from `0.0` to `PI` radians.\n *\n * Special cases:\n * - `acos(x)` is `NaN`,
when `abs(x) > 1` or x is `NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun acos(x: Float):
Float = nativeMath.acos(x.toDouble()).toFloat()\n\n\n**\n * Computes the arc tangent of the value [x];\n
*\n * the returned value is an angle in the range from `-PI/2` to `PI/2` radians.\n *\n * Special cases:\n * - `atan(NaN)` is
`NaN`\n *\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun atan(x: Float): Float =
nativeMath.atan(x.toDouble()).toFloat()\n\n\n**\n * Returns the angle `theta` of the polar
coordinates `(r, theta)` that correspond\n * to the rectangular coordinates `(x, y)` by computing the arc tangent of
the value [y] / [x];\n *\n * the returned value is an angle in the range from `-PI` to `PI` radians.\n *\n * Special cases:\n *
- `atan2(0.0, 0.0)` is `0.0`\n * - `atan2(0.0, x)` is `0.0` for `x > 0` and `PI` for `x < 0`\n * - `atan2(-0.0, x)` is `-

```

$0.0$  for  $x > 0$  and  $-\pi$  for  $x < 0$ .  
 $-\operatorname{atan2}(y, +\infty)$  is  $0.0$  for  $0 < y < +\infty$  and  $-0.0$  for  $-\infty < y < 0$ .  
 $-\operatorname{atan2}(y, -\infty)$  is  $\pi$  for  $0 < y < +\infty$  and  $-\pi$  for  $-\infty < y < 0$ .  
 $-\operatorname{atan2}(y, 0.0)$  is  $\pi/2$  for  $y > 0$  and  $-\pi/2$  for  $y < 0$ .  
 $-\operatorname{atan2}(+\infty, x)$  is  $\pi/2$  for finite  $x$ .  
 $-\operatorname{atan2}(-\infty, x)$  is  $-\pi/2$  for finite  $x$ .  
 $-\operatorname{atan2}(\text{NaN}, x)$  and  $-\operatorname{atan2}(y, \text{NaN})$  is  $\text{NaN}$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun
atan2(y: Float, x: Float): Float = nativeMath.atan2(y.toDouble(), x.toDouble()).toFloat()

```

Computes the hyperbolic sine of the value  $[x]$ .  
 Special cases:  
 $\sinh(\text{NaN})$  is  $\text{NaN}$ .  
 $\sinh(+\infty)$  is  $+\infty$ .  
 $\sinh(-\infty)$  is  $-\infty$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun sinh(x: Float): Float =
 nativeSinh(x.toDouble()).toFloat()

```

Computes the hyperbolic cosine of the value  $[x]$ .  
 Special cases:  
 $\cosh(\text{NaN})$  is  $\text{NaN}$ .  
 $\cosh(+\infty)$  is  $+\infty$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun cosh(x: Float): Float =
 nativeCosh(x.toDouble()).toFloat()

```

Computes the hyperbolic tangent of the value  $[x]$ .  
 Special cases:  
 $\tanh(\text{NaN})$  is  $\text{NaN}$ .  
 $\tanh(+\infty)$  is  $1.0$ .  
 $\tanh(-\infty)$  is  $-1.0$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun tanh(x: Float): Float =
 nativeTanh(x.toDouble()).toFloat()

```

Computes the inverse hyperbolic sine of the value  $[x]$ .  
 The returned value is  $y$  such that  $\sinh(y) = x$ .  
 Special cases:  
 $\operatorname{asinh}(\text{NaN})$  is  $\text{NaN}$ .  
 $\operatorname{asinh}(+\infty)$  is  $+\infty$ .  
 $\operatorname{asinh}(-\infty)$  is  $-\infty$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun asinh(x: Float): Float =
 nativeAsinh(x.toDouble()).toFloat()

```

Computes the inverse hyperbolic cosine of the value  $[x]$ .  
 The returned value is positive  $y$  such that  $\cosh(y) = x$ .  
 Special cases:  
 $\operatorname{acosh}(\text{NaN})$  is  $\text{NaN}$ .  
 $\operatorname{acosh}(x)$  is  $\text{NaN}$  when  $x < 1$ .  
 $\operatorname{acosh}(+\infty)$  is  $+\infty$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun acosh(x: Float): Float = nativeAcosh(x.toDouble()).toFloat()

```

Computes the inverse hyperbolic tangent of the value  $[x]$ .  
 The returned value is  $y$  such that  $\tanh(y) = x$ .  
 Special cases:  
 $\operatorname{atanh}(\text{NaN})$  is  $\text{NaN}$ .  
 $\operatorname{atanh}(x)$  is  $\text{NaN}$  when  $x > 1$  or  $x < -1$ .  
 $\operatorname{atanh}(1.0)$  is  $+\infty$ .  
 $\operatorname{atanh}(-1.0)$  is  $-\infty$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun atanh(x: Float): Float =
 nativeAtanh(x.toDouble()).toFloat()

```

Computes  $\sqrt{x^2 + y^2}$  without intermediate overflow or underflow.  
 Special cases:  
 returns  $+\infty$  if any of arguments is infinite.  
 returns  $\text{NaN}$  if any of arguments is  $\text{NaN}$  and the other is not infinite.

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun hypot(x: Float, y: Float): Float =
 nativeHypot(x.toDouble(), y.toDouble()).toFloat()

```

Computes the positive square root of the value  $[x]$ .  
 Special cases:  
 $\sqrt{x}$  is  $\text{NaN}$  when  $x < 0$  or  $x$  is  $\text{NaN}$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun sqrt(x: Float): Float =
 nativeMath.sqrt(x.toDouble()).toFloat()

```

Computes Euler's number  $e$  raised to the power of the value  $[x]$ .  
 Special cases:  
 $\exp(\text{NaN})$  is  $\text{NaN}$ .  
 $\exp(+\infty)$  is  $+\infty$ .  
 $\exp(-\infty)$  is  $0.0$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun exp(x: Float): Float =
 nativeMath.exp(x.toDouble()).toFloat()

```

Computes  $\exp(x) - 1$ .  
 This function can be implemented to produce more precise result for  $[x]$  near zero.  
 Special cases:  
 $\operatorname{expm1}(\text{NaN})$  is  $\text{NaN}$ .  
 $\operatorname{expm1}(+\infty)$  is  $+\infty$ .  
 $\operatorname{expm1}(-\infty)$  is  $-1.0$ .  
 @see `[exp]` function.

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun expm1(x: Float): Float = nativeExp1(x.toDouble()).toFloat()

```

Computes the logarithm of the value  $[x]$  to the given `[base]`.  
 Special cases:  
 $\log(x, b)$  is  $\text{NaN}$  if either  $x$  or  $b$  are  $\text{NaN}$ .  
 $\log(x, b)$  is  $\text{NaN}$  when  $x < 0$  or  $b \leq 0$  or  $b == 1.0$ .  
 $\log(+\infty, +\infty)$  is  $\text{NaN}$ .  
 $\log(+\infty, b)$  is  $+\infty$  for  $b > 1$  and  $-\infty$  for  $b < 1$ .  
 $\log(0.0, b)$  is  $-\infty$  for  $b > 1$  and  $+\infty$  for  $b > 1$ .  
 See also logarithm functions for common fixed bases: `[ln]`, `[log10]` and `[log2]`.

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun log(x: Float, base: Float): Float = log(x.toDouble(), base.toDouble()).toFloat()

```

Computes the natural logarithm (base  $E$ ) of the value  $[x]$ .  
 Special cases:  
 $\ln(\text{NaN})$  is  $\text{NaN}$ .  
 $\ln(x)$  is  $\text{NaN}$  when  $x < 0.0$ .  
 $\ln(+\infty)$  is  $+\infty$ .  
 $\ln(0.0)$  is  $-\infty$ .

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun ln(x: Float): Float =

```

`nativeMath.log(x.toDouble()).toFloat()`\n\n\*\*\n \* Computes the common logarithm (base 10) of the value [x].\n \*\n \* @see [ln] function for special cases.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log10(x: Float): Float = nativeLog10(x.toDouble()).toFloat()\n\n\*\*\n \* Computes the binary logarithm (base 2) of the value [x].\n \*\n \* @see [ln] function for special cases.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun log2(x: Float): Float = nativeLog2(x.toDouble()).toFloat()\n\n\*\*\n \* Computes  $\ln(x + 1)$ .\n \*\n \* This function can be implemented to produce more precise result for [x] near zero.\n \*\n \* Special cases:\n \* -  $\ln1p(\text{NaN})$  is  $\text{NaN}$ \n \* -  $\ln1p(x)$  is  $\text{NaN}$  where  $x < -1.0$ \n \* -  $\ln1p(-1.0)$  is  $-\text{Inf}$ \n \* -  $\ln1p(+\text{Inf})$  is  $+\text{Inf}$ \n \*\n \* @see [ln] function\n \* @see [expm1] function\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ln1p(x: Float): Float = nativeLog1p(x.toDouble()).toFloat()\n\n\*\*\n \* Rounds the given value [x] to an integer towards positive infinity.\n \*\n \* @return the smallest Float value that is greater than or equal to the given value [x] and is a mathematical integer.\n \*\n \* Special cases:\n \* -  $\text{ceil}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun ceil(x: Float): Float = nativeMath.ceil(x.toDouble()).toFloat()\n\n\*\*\n \* Rounds the given value [x] to an integer towards negative infinity.\n \*\n \* @return the largest Float value that is smaller than or equal to the given value [x] and is a mathematical integer.\n \*\n \* Special cases:\n \* -  $\text{floor}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun floor(x: Float): Float = nativeMath.floor(x.toDouble()).toFloat()\n\n\*\*\n \* Rounds the given value [x] to an integer towards zero.\n \*\n \* @return the value [x] having its fractional part truncated.\n \*\n \* Special cases:\n \* -  $\text{truncate}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun truncate(x: Float): Float = truncate(x.toDouble()).toFloat()\n\n\*\*\n \* Rounds the given value [x] towards the closest integer with ties rounded towards even integer.\n \*\n \* Special cases:\n \* -  $\text{round}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun round(x: Float): Float = round(x.toDouble()).toFloat()\n\n\*\*\n \* Returns the absolute value of the given value [x].\n \*\n \* Special cases:\n \* -  $\text{abs}(\text{NaN})$  is  $\text{NaN}$ \n \*\n \* @see absoluteValue extension property for [Float]\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun abs(x: Float): Float = nativeMath.abs(x.toDouble()).toFloat()\n\n\*\*\n \* Returns the sign of the given value [x]:\n \* -  $-1.0$  if the value is negative,\n \* - zero if the value is zero,\n \* -  $1.0$  if the value is positive\n \*\n \* Special case:\n \* -  $\text{sign}(\text{NaN})$  is  $\text{NaN}$ \n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun sign(x: Float): Float = nativeSign(x.toDouble()).toFloat()\n\n\*\*\n \* Returns the smaller of two values.\n \*\n \* If either value is  $\text{NaN}$ , then the result is  $\text{NaN}$ .\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun min(a: Float, b: Float): Float = nativeMath.min(a, b)\n\n\*\*\n \* Returns the greater of two values.\n \*\n \* If either value is  $\text{NaN}$ , then the result is  $\text{NaN}$ .\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun max(a: Float, b: Float): Float = nativeMath.max(a, b)\n\n\*\*\n \* Returns the cube root of [x]. For any  $x$ ,  $\text{cbrt}(-x) == -\text{cbrt}(x)$ ; that is, the cube root of a negative value is the negative of the cube root of that value's magnitude. Special cases:\n \* - If the argument is  $\text{NaN}$ , then the result is  $\text{NaN}$ .\n \* - If the argument is infinite, then the result is an infinity with the same sign as the argument.\n \* - If the argument is zero, then the result is a zero with the same sign as the argument.\n \*/\n@SinceKotlin("1.8")\n@WasExperimental(ExperimentalStdlibApi::class)\n@InlineOnly\npublic actual inline fun cbrt(x: Float): Float = nativeMath.cbrt(x.toDouble()).toFloat()\n\n\*\*\n \* Raises this value to the power [x].\n \*\n \* Special cases:\n \* -  $\text{b.pow}(0.0)$  is  $1.0$ \n \* -  $\text{b.pow}(1.0) == b$ \n \* -  $\text{b.pow}(\text{NaN})$  is  $\text{NaN}$ \n \* -  $\text{NaN.pow}(x)$  is  $\text{NaN}$  for  $x != 0.0$ \n \* -  $\text{b.pow}(\text{Inf})$  is  $\text{NaN}$  for  $\text{abs}(b) == 1.0$ \n \* -  $\text{b.pow}(x)$  is  $\text{NaN}$  for  $b < 0$  and  $x$  is finite and not an integer\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.pow(x: Float): Float = nativeMath.pow(this.toDouble(), x.toDouble()).toFloat()\n\n\*\*\n \* Raises this value to the integer power [n].\n \*\n \* See the other overload of [pow] for details.\n \*/\n@SinceKotlin("1.2")\n@InlineOnly\npublic actual inline fun Float.pow(n: Int): Float = nativeMath.pow(this.toDouble(), n.toDouble()).toFloat()\n\n\*\*\n \* Returns the absolute

value of this value.  
Special cases: `-NaN.absoluteValue` is `-NaN`  
@see `abs` function

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline val Float.absoluteValue: Float get() =
 nativeMath.abs(this.toDouble()).toFloat()

```

Returns the sign of this value:  
- `-1.0` if the value is negative,  
- zero if the value is zero,  
- `1.0` if the value is positive  
Special case: `-NaN.sign` is `-NaN`

```

@SinceKotlin("1.2")
@InlineOnly
public
actual inline val Float.sign: Float get() = nativeSign(this.toDouble()).toFloat()

```

Returns this value with the sign bit same as of the [sign] value.  
If [sign] is `-NaN` the sign of the result is undefined.

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun Float.withSign(sign: Float): Float =
 this.toDouble().withSign(sign.toDouble()).toFloat()

```

Returns this value with the sign bit same as of the [sign] value.

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun Float.withSign(sign: Int): Float =
 this.toDouble().withSign(sign.toDouble()).toFloat()

```

Rounds this [Float] value to the nearest integer and converts the result to [Int].  
Ties are rounded towards positive infinity.  
Special cases:  
- `x.roundToInt() == Int.MAX_VALUE` when `x > Int.MAX_VALUE`  
- `x.roundToInt() == Int.MIN_VALUE` when `x < Int.MIN_VALUE`  
@throws `IllegalArgumentException` when this value is `-NaN`

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun Float.roundToInt(): Int =
 toDouble().roundToInt()

```

Rounds this [Float] value to the nearest integer and converts the result to [Long].  
Ties are rounded towards positive infinity.  
Special cases:  
- `x.roundToLong() == Long.MAX_VALUE` when `x > Long.MAX_VALUE`  
- `x.roundToLong() == Long.MIN_VALUE` when `x < Long.MIN_VALUE`  
@throws `IllegalArgumentException` when this value is `-NaN`

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun Float.roundToLong(): Long =
 toDouble().roundToLong()

```

endregion  
region ===== Integer Math  
=====

Returns the absolute value of the given value [n].  
Special cases:  
- `abs(Int.MIN_VALUE)` is `-Int.MIN_VALUE` due to an overflow  
@see `absoluteValue` extension property for [Int]  
// TODO: remove manual 'or' when KT-19290 is fixed

```

@SinceKotlin("1.2")
public
actual fun abs(n: Int): Int = if (n < 0) (-n or 0) else n

```

Returns the smaller of two values.

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun min(a: Int, b: Int): Int = nativeMath.min(a, b)

```

Returns the greater of two values.

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline fun max(a: Int, b: Int): Int = nativeMath.max(a, b)

```

Returns the absolute value of this value.  
Special cases:  
- `-Int.MIN_VALUE.absoluteValue` is `-Int.MIN_VALUE` due to an overflow  
@see `abs` function

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline val Int.absoluteValue: Int get() =
 abs(this)

```

Returns the sign of this value:  
- `-1` if the value is negative,  
- `0` if the value is zero,  
- `1` if the value is positive

```

@SinceKotlin("1.2")
public actual val Int.sign: Int get() = when {
 this < 0 -> -1
 this > 0 -> 1
 else -> 0
}

```

Returns the absolute value of the given value [n].  
Special cases:  
- `abs(Long.MIN_VALUE)` is `-Long.MIN_VALUE` due to an overflow  
@see `absoluteValue` extension property for [Long]

```

@SinceKotlin("1.2")
public actual fun abs(n: Long): Long = if (n < 0) -n else n

```

Returns the smaller of two values.

```

@SinceKotlin("1.2")
@Suppress("NOTHING_TO_INLINE")
public actual inline fun min(a: Long, b: Long): Long = if (a <= b) a else b

```

Returns the greater of two values.

```

@SinceKotlin("1.2")
@Suppress("NOTHING_TO_INLINE")
public actual inline fun max(a: Long, b: Long): Long = if (a >= b) a else b

```

Returns the absolute value of this value.  
Special cases:  
- `-Long.MIN_VALUE.absoluteValue` is `-Long.MIN_VALUE` due to an overflow  
@see `abs` function

```

@SinceKotlin("1.2")
@InlineOnly
public actual inline val Long.absoluteValue: Long get() =
 abs(this)

```

Returns the sign of this value:  
- `-1` if the value is negative,  
- `0` if the value is zero,  
- `1` if the value is positive

```

@SinceKotlin("1.2")
public actual val Long.sign: Int get() = when {
 this < 0 -> -1
 this > 0 -> 1
 else -> 0
}

```

endregion  
//

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Use of this source code is governed by the Apache 2.0 license that can be found in the

license/LICENSE.txt file.\n \*/\n\npackage kotlin\n\n/\*\*\n \* Returns `true` if the specified number is a\n \* Not-a-Number (NaN) value, `false` otherwise.\n \*/\npublic actual fun Double.isNaN(): Boolean = this != this\n\n/\*\*\n \* Returns `true` if the specified number is a\n \* Not-a-Number (NaN) value, `false` otherwise.\n \*/\npublic actual fun Float.isNaN(): Boolean = this != this\n\n/\*\*\n \* Returns `true` if this value is infinitely large in magnitude.\n \*/\npublic actual fun Double.isInfinite(): Boolean = this == Double.POSITIVE\_INFINITY || this == Double.NEGATIVE\_INFINITY\n\n/\*\*\n \* Returns `true` if this value is infinitely large in magnitude.\n \*/\npublic actual fun Float.isInfinite(): Boolean = this == Float.POSITIVE\_INFINITY || this == Float.NEGATIVE\_INFINITY\n\n/\*\*\n \* Returns `true` if the argument is a finite floating-point value; returns `false` otherwise (for `NaN` and infinity arguments).\n \*/\npublic actual fun Double.isFinite(): Boolean = !isInfinite() && !isNaN()\n\n/\*\*\n \* Returns `true` if the argument is a finite floating-point value; returns `false` otherwise (for `NaN` and infinity arguments).\n \*/\npublic actual fun Float.isFinite(): Boolean = !isInfinite() && !isNaN()\n\n/\*\*\n \* Counts the number of set bits in the binary representation of this [Int] number.\n \*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun Int.countOneBits(): Int {\n // Hacker's Delight 5-1 algorithm\n var v = this\n v = (v and 0x55555555) + (v.ushr(1) and 0x55555555)\n v = (v and 0x33333333) + (v.ushr(2) and 0x33333333)\n v = (v and 0x0F0F0F0F) + (v.ushr(4) and 0x0F0F0F0F)\n v = (v and 0x00FF00FF) + (v.ushr(8) and 0x00FF00FF)\n v = (v and 0x0000FFFF) + (v.ushr(16))\n return v\n}\n\n/\*\*\n \* Counts the number of consecutive most significant bits that are zero in the binary representation of this [Int] number.\n \*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic actual inline fun Int.countLeadingZeroBits(): Int = nativeClz32(this)\n\n/\*\*\n \* Counts the number of consecutive least significant bits that are zero in the binary representation of this [Int] number.\n \*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun Int.countTrailingZeroBits(): Int =\n // Hacker's Delight 5-4 algorithm for expressing countTrailingZeroBits with countLeadingZeroBits\n Int.SIZE\_BITS - (this or -this).inv().countLeadingZeroBits()\n\n/\*\*\n \* Returns a number having a single bit set in the position of the most significant set bit of this [Int] number, or zero, if this number is zero.\n \*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun Int.takeHighestOneBit(): Int =\n if (this == 0) 0 else 1.shl(Int.SIZE\_BITS - 1 - countLeadingZeroBits())\n\n/\*\*\n \* Returns a number having a single bit set in the position of the least significant set bit of this [Int] number, or zero, if this number is zero.\n \*/\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun Int.takeLowestOneBit(): Int =\n // Hacker's Delight 2-1 algorithm for isolating rightmost 1-bit\n this and -this\n\n/\*\*\n \* Rotates the binary representation of this [Int] number left by the specified [bitCount] number of bits.\n \* The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n \* Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n \* `number.rotateLeft(-n) == number.rotateRight(n)`\n \* Rotating by a multiple of [Int.SIZE\_BITS] (32) returns the same number, or more generally\n \* `number.rotateLeft(n) == number.rotateLeft(n % 32)`\n \*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic actual fun Int.rotateLeft(bitCount: Int): Int =\n shl(bitCount) or ushr(Int.SIZE\_BITS - bitCount)\n\n/\*\*\n \* Rotates the binary representation of this [Int] number right by the specified [bitCount] number of bits.\n \* The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n \* Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n \* `number.rotateRight(-n) == number.rotateLeft(n)`\n \* Rotating by a multiple of [Int.SIZE\_BITS] (32) returns the same number, or more generally\n \* `number.rotateRight(n) == number.rotateRight(n % 32)`\n \*/\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic









```

isMarkedNullable.hashCode()\n\n override fun toString(): String {\n val kClass = (classifier as? KClass<*>)\n val classifierName = when {\n kClass == null -> classifier.toString()\n kClass.simpleName != null -> kClass.simpleName\n else -> \"(non-denotable type)\"\n }\n val args =\n if (arguments.isEmpty()) \"\"\n else arguments.joinToString(\" \", \"<\", \">\")\n val nullable = if (isMarkedNullable) \"?\" else \"\"\n return classifierName + args + nullable\n }\n\ninternal object DynamicKType : KType {\n override val classifier: KClassifier? = null\n override val arguments: List<KTypeProjection> = emptyList()\n override val isMarkedNullable: Boolean = false\n override fun toString(): String = \"dynamic\"\n}\n\n/*\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.reflect.*\n\ninternal data class KTypeParameterImpl(\n override val name: String,\n override val upperBounds: List<KType>,\n override val variance: KVariance,\n override val isReified: Boolean\n) : KTypeParameter {\n override fun toString(): String = name\n}\n\n/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.reflect.js.internal\n\nimport kotlin.js.JsClass\n\n@JsName(\"PrimitiveClasses\")\ninternal object PrimitiveClasses {\n @JsName(\"anyClass\")\n val anyClass = PrimitiveKClassImpl(js(\"Object\").unsafeCast<JsClass<Any>>(), \"Any\", { it is Any })\n\n @JsName(\"numberClass\")\n val numberClass = PrimitiveKClassImpl(js(\"Number\").unsafeCast<JsClass<Number>>(), \"Number\", { it is Number })\n\n @JsName(\"nothingClass\")\n val nothingClass = NothingKClassImpl\n\n @JsName(\"booleanClass\")\n val booleanClass = PrimitiveKClassImpl(js(\"Boolean\").unsafeCast<JsClass<Boolean>>(), \"Boolean\", { it is Boolean })\n\n @JsName(\"byteClass\")\n val byteClass = PrimitiveKClassImpl(js(\"Number\").unsafeCast<JsClass<Byte>>(), \"Byte\", { it is Byte })\n\n @JsName(\"shortClass\")\n val shortClass = PrimitiveKClassImpl(js(\"Number\").unsafeCast<JsClass<Short>>(), \"Short\", { it is Short })\n\n @JsName(\"intClass\")\n val intClass = PrimitiveKClassImpl(js(\"Number\").unsafeCast<JsClass<Int>>(), \"Int\", { it is Int })\n\n @JsName(\"floatClass\")\n val floatClass = PrimitiveKClassImpl(js(\"Number\").unsafeCast<JsClass<Float>>(), \"Float\", { it is Float })\n\n @JsName(\"doubleClass\")\n val doubleClass = PrimitiveKClassImpl(js(\"Number\").unsafeCast<JsClass<Double>>(), \"Double\", { it is Double })\n\n @JsName(\"arrayClass\")\n val arrayClass = PrimitiveKClassImpl(js(\"Array\").unsafeCast<JsClass<Array<*>>>(), \"Array\", { it is Array<*> })\n\n @JsName(\"stringClass\")\n val stringClass = PrimitiveKClassImpl(js(\"String\").unsafeCast<JsClass<String>>(), \"String\", { it is String })\n\n @JsName(\"throwableClass\")\n val throwableClass = PrimitiveKClassImpl(js(\"Error\").unsafeCast<JsClass<Throwable>>(), \"Throwable\", { it is Throwable })\n\n @JsName(\"booleanArrayClass\")\n val booleanArrayClass = PrimitiveKClassImpl(js(\"Array\").unsafeCast<JsClass<BooleanArray>>(), \"BooleanArray\", { it is BooleanArray })\n\n @JsName(\"charArrayClass\")\n val charArrayClass = PrimitiveKClassImpl(js(\"Uint16Array\").unsafeCast<JsClass<CharArray>>(), \"CharArray\", { it is CharArray })\n\n @JsName(\"byteArrayClass\")\n val byteArrayClass = PrimitiveKClassImpl(js(\"Int8Array\").unsafeCast<JsClass<ByteArray>>(), \"ByteArray\", { it is ByteArray })\n\n @JsName(\"shortArrayClass\")\n val shortArrayClass = PrimitiveKClassImpl(js(\"Int16Array\").unsafeCast<JsClass<ShortArray>>(), \"ShortArray\", { it is ShortArray })\n\n @JsName(\"intArrayClass\")\n val intArrayClass = PrimitiveKClassImpl(js(\"Int32Array\").unsafeCast<JsClass<IntArray>>(), \"IntArray\", { it is IntArray })\n\n @JsName(\"longArrayClass\")\n val longArrayClass = PrimitiveKClassImpl(js(\"Array\").unsafeCast<JsClass<LongArray>>(),

```

```

 \LongArray\", { it is LongArray })\n\n @JsName(\"floatArrayClass\")\n val floatArrayClass =
PrimitiveKClassImpl(js(\"Float32Array\").unsafeCast<JsClass<FloatArray>>(), \"FloatArray\", { it is FloatArray
})\n\n @JsName(\"doubleArrayClass\")\n val doubleArrayClass =
PrimitiveKClassImpl(js(\"Float64Array\").unsafeCast<JsClass<DoubleArray>>(), \"DoubleArray\", { it is
DoubleArray })\n\n @JsName(\"functionClass\")\n fun functionClass(arity: Int): KClassImpl<Any> {\n
return functionClasses.get(arity) ?: run {\n val result =
PrimitiveKClassImpl(js(\"Function\").unsafeCast<JsClass<Any>>(), \"Function$arity\", \n
{ jsTypeOf(it) === \"function\" && it.asDynamic().length === arity })\n functionClasses.asDynamic()[arity]
= result\n result\n }\n}\n\nprivate val functionClasses =
arrayOfNulls<KClassImpl<Any>>(0), \"/*\n *

```

Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\n// a package is omitted to get declarations directly under the module\n\nimport kotlin.reflect.\*\nimport

```

kotlin.reflect.js.internal.*\n\n@JsName(\"getKClass\")\n\ninternal fun <T : Any> getKClass(jClass: Any /*
JsClass<T> | Array<JsClass<T>> */): KClass<T> {\n return if (js(\"Array\").isArray(jClass)) {\n
getKClassM(jClass.unsafeCast<Array<JsClass<T>>())\n } else {\n
getKClass1(jClass.unsafeCast<JsClass<T>>())\n }\n}\n\n@JsName(\"getKClassM\")\n\ninternal fun <T : Any>
getKClassM(jClasses: Array<JsClass<T>>): KClass<T> = when (jClasses.size) {\n 1 ->
getKClass1(jClasses[0])\n 0 -> NothingKClassImpl.unsafeCast<KClass<T>>()\n else ->
ErrorKClass().unsafeCast<KClass<T>>()\n}\n\n@JsName(\"getKClassFromExpression\")\n\ninternal fun <T : Any>
getKClassFromExpression(e:

```

```

T): KClass<T> = \n when (jsTypeOf(e)) {\n \"string\" -> PrimitiveClasses.stringClass\n \"number\" -> if
(jsBitwiseOr(e, 0).asDynamic() === e) PrimitiveClasses.intClass else PrimitiveClasses.doubleClass\n
\"boolean\" -> PrimitiveClasses.booleanClass\n \"function\" ->
PrimitiveClasses.functionClass(e.asDynamic().length)\n else -> {\n when {\n e is BooleanArray
-> PrimitiveClasses.booleanArrayClass\n e is CharArray -> PrimitiveClasses.charArrayClass\n
 e is ByteArray -> PrimitiveClasses.byteArrayClass\n e is ShortArray -> PrimitiveClasses.shortArrayClass\n
 e is IntArray -> PrimitiveClasses.intArrayClass\n e is LongArray ->
PrimitiveClasses.longArrayClass\n e is FloatArray -> PrimitiveClasses.floatArrayClass\n
 e is DoubleArray -> PrimitiveClasses.doubleArrayClass\n e is KClass<*> -> KClass::class\n
 e is Array<*> -> PrimitiveClasses.arrayClass\n else -> {\n val constructor =
js(\"Object\").getPrototypeOf(e).constructor\n when {\n constructor === js(\"Object\") ->
PrimitiveClasses.anyClass\n constructor === js(\"Error\") -> PrimitiveClasses.throwableClass\n
 else -> {\n val jsClass: JsClass<T> = constructor\n getKClass1(jsClass)\n
 }\n }\n }\n }\n }\n }\n}\n\n}

```

```

.unsafeCast<KClass<T>>()\n\n@JsName(\"getKClass1\")\n\ninternal fun <T : Any> getKClass1(jClass:
JsClass<T>): KClass<T> {\n if (jClass === js(\"String\")) return
PrimitiveClasses.stringClass.unsafeCast<KClass<T>>()\n\n val metadata = jClass.asDynamic().`$metadata$\`\n\n
return if (metadata != null) {\n if (metadata.`$kClass$` == null) {\n val kClass =
SimpleKClassImpl(jClass)\n metadata.`$kClass$` = kClass\n kClass\n } else {\n
metadata.`$kClass$`\n }\n } else {\n SimpleKClassImpl(jClass)\n }\n}\n\n\", \"/*\n * Copyright 2010-2018

```

JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\npackage kotlin.js\n\n/\*\*\n \* Exposes the JavaScript [RegExp]([https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global\\_Objects/RegExp](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/RegExp)) to Kotlin.\n \*/\n\n@Suppress(\"NOT\_DOCUMENTED\")\n\npublic external class RegExp(pattern: String, flags: String? = definedExternally) {\n\n public fun test(str: String): Boolean\n\n public fun exec(str: String): RegExpMatch?\n\n public override fun toString(): String\n\n /\*\*\n \* The lastIndex is a read/write integer property of regular





effect is exactly as if the [value] were converted to a string by the `value.toString()` method, and then that string was appended to this string builder.

```

 actual fun append(value: Any?): String Builder {
 string += value.toString()
 return this
 }
 /**
 * Appends the string representation of the specified boolean [value] to this string builder and returns this instance.
 * The overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method, and then that string was appended to this string builder.
 */
 @SinceKotlin("1.3")
 actual fun append(value: Boolean): String Builder {
 string += value
 return this
 }
 /**
 * Appends characters in the specified character array [value] to this string builder and returns this instance.
 * Characters are appended in order, starting at the index 0.
 */
 @SinceKotlin("1.4")

```

```

 @WasExperimental(ExperimentalStdlibApi::class)
 actual fun append(value: CharArray): String Builder {
 string += value.concatToString()
 return this
 }
 /**
 * Appends the specified string [value] to this string builder and returns this instance.
 * If [value] is `null`, then the four characters `null` are appended.
 */
 @SinceKotlin("1.3")
 actual fun append(value: String?): String Builder {
 this.string += value ?: "null"
 return this
 }
 /**
 * Returns the current capacity of this string builder.
 * The capacity is the maximum length this string builder can have before an allocation occurs.
 * In Kotlin/JS implementation of String Builder the value returned from this method may not indicate the actual size of the backing storage.
 */
 @SinceKotlin("1.3")
 // @ExperimentalStdlibApi
 @Deprecated("Obtaining String Builder capacity is

```

```

not supported in JS and common code.", level = DeprecationLevel.ERROR)
 actual fun capacity(): Int = length
 /**
 * Ensures that the capacity of this string builder is at least equal to the specified [minimumCapacity].
 * If the current capacity is less than the [minimumCapacity], a new backing storage is allocated with greater capacity.
 * Otherwise, this method takes no action and simply returns.
 * In Kotlin/JS implementation of String Builder the size of the backing storage is not extended to comply the given [minimumCapacity],
 * thus calling this method has no effect on the further performance of operations.
 */
 @SinceKotlin("1.4")

```

```

 @WasExperimental(ExperimentalStdlibApi::class)
 actual fun ensureCapacity(minimumCapacity: Int) {
 //
 }
 /**
 * Returns the index within this string builder of the first occurrence of the specified [string].
 * Returns -1 if the specified [string] does not occur in this string builder.
 */
 @SinceKotlin("1.4")

```

```

 @WasExperimental(ExperimentalStdlibApi::class)
 actual fun indexOf(string: String): Int = this.string.asDynamic().indexOf(string)
 /**
 * Returns the index within this string builder of the first occurrence of the specified [string],
 * starting at the specified [startIndex].
 * Returns -1 if the specified [string] does not occur in this string builder starting at the specified [startIndex].
 */
 @SinceKotlin("1.4")

```

```

 @WasExperimental(ExperimentalStdlibApi::class)
 actual fun indexOf(string: String, startIndex: Int): Int = this.string.asDynamic().indexOf(string, startIndex)
 /**
 * Returns the index within this string builder of the last occurrence of the specified [string].
 * The last occurrence of empty string `""` is considered to be at the index equal to `this.length`.
 * Returns -1 if the specified [string] does not occur in

```

```

this string builder.
 */
 @SinceKotlin("1.4")
 @WasExperimental(ExperimentalStdlibApi::class)
 actual fun lastIndexOf(string: String): Int = this.string.asDynamic().lastIndexOf(string)
 /**
 * Returns the index within this string builder of the last occurrence of the specified [string],
 * starting from the specified [startIndex] toward the beginning.
 * Returns -1 if the specified [string] does not occur in this string builder starting at the specified [startIndex].
 */
 @SinceKotlin("1.4")

```

```

 @WasExperimental(ExperimentalStdlibApi::class)
 actual fun lastIndexOf(string: String, startIndex: Int): Int {
 if (string.isEmpty() && startIndex < 0) return -1
 return this.string.asDynamic().lastIndexOf(string, startIndex)
 }
 /**
 * Inserts the string representation of the specified boolean [value] into this string builder at the specified [index] and returns this instance.
 * The overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,
 * and then that string was inserted into this string builder at the specified [index].
 */
 @throws

```



```

else {
 for (i in length until newLength) {
 string += "\u0000"
 }
}

/**
 * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the
 [length] (exclusive).
 * @throws IndexOutOfBoundsException if [startIndex] is less than zero or greater
 than the length of this string builder.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
actual fun substring(startIndex: Int): String {
 AbstractList.checkPositionIndex(startIndex, length)
 return string.substring(startIndex)
}

/**
 * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive) and up to the
 [endIndex] (exclusive).
 * @throws IndexOutOfBoundsException or [IllegalArgumentException] when
 [startIndex] or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
actual fun substring(startIndex:
Int, endIndex: Int): String {
 AbstractList.checkBoundsIndexes(startIndex, endIndex, length)
 return
string.substring(startIndex, endIndex)
}

/**
 * Attempts to reduce storage used for this string builder.
 * If the backing storage of this string builder
 is larger than necessary to hold its current contents,
 * then it may be resized to become more space efficient.
 * Calling this method may, but is not required to, affect the value of the [capacity] property.
 * In
 Kotlin/JS implementation of StringBuilder the size of the backing storage is always equal to the length of the string
 builder.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
actual fun
trimToSize() {}

override fun toString(): String = string

/**
 * Clears the content of this string
 builder making it empty and returns this instance.
 * @sample samples.text.Strings.clearStringBuilder
 */
@SinceKotlin("1.3")
public fun clear(): StringBuilder {
 string = ""
 return this
}

/**
 * Sets the character at the specified [index] to the specified [value].
 * @throws
 IndexOutOfBoundsException if [index] is out of bounds
 of this string builder.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public operator fun set(index: Int, value: Char) {
 AbstractList.checkElementIndex(index, length)
 string = string.substring(0, index) + value + string.substring(index + 1)
}

/**
 * Replaces characters in
 the specified range of this string builder with characters in the specified string [value] and returns this instance.
 * @param startIndex the beginning (inclusive) of the range to replace.
 * @param endIndex the end
 (exclusive) of the range to replace.
 * @param value the string to replace with.
 * @throws
 IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length
 of this string builder, or `startIndex > endIndex`.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun setRange(startIndex: Int,
endIndex: Int, value: String): StringBuilder {
 checkReplaceRange(startIndex, endIndex, length)
 this.string = this.string.substring(0, startIndex) + value + this.string.substring(endIndex)
 return this
}

private fun checkReplaceRange(startIndex: Int, endIndex: Int, length: Int) {
 if (startIndex < 0 || startIndex >
length) {
 throw IndexOutOfBoundsException("startIndex: $startIndex, length: $length")
 }
 if
(startIndex > endIndex) {
 throw IllegalArgumentException("startIndex($startIndex) >
endIndex($endIndex)")
 }
}

/**
 * Removes the character at the specified [index] from this string
 builder and returns this instance.
 * If the `Char` at the specified [index] is part of a supplementary code
 point, this method does not remove the entire supplementary character.
 * @param index the index of
 `Char` to remove.
 * @throws IndexOutOfBoundsException
 if [index] is out of bounds of this string builder.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun deleteAt(index: Int): StringBuilder {
 AbstractList.checkElementIndex(index, length)
 string = string.substring(0, index) + string.substring(index +
1)
 return this
}

/**
 * Removes characters in the specified range from this string builder and
 returns this instance.
 * @param startIndex the beginning (inclusive) of the range to remove.
 *
 * @param endIndex the end (exclusive) of the range to remove.
 * @throws IndexOutOfBoundsException
 or [IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex >
endIndex`.
 */
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun

```



```

deleteRange(startIndex: Int, endIndex: Int): StringBuilder {\n
 checkReplaceRange(startIndex,
endIndex, length)\n
 string = string.substring(0, startIndex) + string.substring(endIndex)\n
 return this\n
}\n
/**\n
 * Copies characters from this string builder into the [destination] character array.\n
 * @param destination the array to copy to.\n
 * @param destinationOffset the position in the array to copy to, 0 by
default.\n
 * @param startIndex the beginning (inclusive) of the range to copy, 0 by default.\n
 * @param
endIndex the end (exclusive) of the range to copy, length of this string builder by default.\n
 * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this
string builder indices or when `startIndex > endIndex`.\n
 * @throws IndexOutOfBoundsException when the
subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n
 * or when that index
is out of the [destination] array indices range.\n
 *\n
 @SinceKotlin("1.4")\n
 @WasExperimental(ExperimentalStdlibApi::class)\n
 public fun
toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int = this.length) {\n
 AbstractList.checkBoundsIndexes(startIndex, endIndex, length)\n
AbstractList.checkBoundsIndexes(destinationOffset, destinationOffset + endIndex - startIndex, destination.size)\n
 var dstIndex = destinationOffset\n
 for (index in startIndex until endIndex) {\n
 destination[dstIndex++]
= string[index]\n
 }\n
}\n
/**\n
 * Appends characters in a subarray of the specified character array
[value] to this string builder and returns this instance.\n
 * Characters are appended in order, starting at
specified [startIndex].\n
 * @param value the array from which characters are appended.\n
 * @param
startIndex the beginning (inclusive) of the subarray to append.\n
 * @param endIndex the end (exclusive)
of the subarray to append.\n
 * @throws IndexOutOfBoundsException or [IllegalArgumentException]
when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n
 *\n
 @SinceKotlin("1.4")\n
 @WasExperimental(ExperimentalStdlibApi::class)\n
 public fun
appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder {\n
 string +=
value.concatToString(startIndex, endIndex)\n
 return this\n
}\n
/**\n
 * Appends a subsequence of the
specified character sequence [value] to this string builder and returns this instance.\n
 * @param value the
character sequence from which a subsequence is appended.\n
 * @param startIndex the beginning (inclusive) of
the subsequence to append.\n
 * @param endIndex the end (exclusive) of the subsequence to append.\n
 * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of the [value] character sequence indices or when `startIndex > endIndex`.\n
 *\n
 @SinceKotlin("1.4")\n
 @WasExperimental(ExperimentalStdlibApi::class)\n
 public fun appendRange(value:
CharSequence, startIndex: Int, endIndex: Int): StringBuilder {\n
 val stringCsq = value.toString()\n
AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)\n
 string +=
stringCsq.substring(startIndex, endIndex)\n
 return this\n
}\n
/**\n
 * Inserts characters in a subarray of
the specified character array [value] into this string builder at the specified [index] and returns this instance.\n
 * The inserted characters go in same order as in the [value] array, starting at [index].\n
 * @param index
the position in this string builder to insert at.\n
 * @param value the array from which characters are inserted.\n
 * @param startIndex the beginning (inclusive) of the subarray to insert.\n
 * @param endIndex
the end (exclusive) of the subarray to insert.\n
 * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when
`startIndex > endIndex`.\n
 * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the
length of this string builder.\n
 *\n
 @SinceKotlin("1.4")\n
 *\n
 @WasExperimental(ExperimentalStdlibApi::class)\n
 public fun insertRange(index: Int, value: CharArray,
startIndex: Int, endIndex: Int): StringBuilder {\n
 AbstractList.checkPositionIndex(index, this.length)\n
string = string.substring(0, index) + value.concatToString(startIndex, endIndex) + string.substring(index)\n
return this\n
}\n
/**\n
 * Inserts characters in a subsequence of the specified character sequence [value] into
this string builder at the specified [index] and returns this instance.\n
 * The inserted characters go in the
same order

```

as in the [value] character sequence, starting at [index].

\* @param index the position in this string builder to insert at.

\* @param value the character sequence from which a subsequence is inserted.

\* @param startIndex the beginning (inclusive) of the subsequence to insert.

\* @param endIndex the end (exclusive) of the subsequence to insert.

\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.

\* @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.

@SinceKotlin("1.4")

@WasExperimental(ExperimentalStdlibApi::class)

```
public fun insertRange(index: Int, value: CharSequence,
 startIndex: Int, endIndex: Int): String Builder {
 AbstractList.checkNotNull(index, length)
 val stringCsq = value.toString()
 AbstractList.checkBoundsIndexes(startIndex, endIndex, stringCsq.length)
 string = string.substring(0,
 index) + stringCsq.substring(startIndex, endIndex) + string.substring(index)
 return this
}
```

Clears the content of this string builder making it empty and returns this instance.

@sample

```
samples.text.Strings.clearStringBuilder
```

@SinceKotlin("1.3")

@Suppress("EXTENSION\_SHADOWED\_BY\_MEMBER", "NOTHING\_TO\_INLINE")

```
public actual inline fun String Builder.clear(): String Builder = this.clear()
```

Sets the character at the specified [index] to the specified [value].

\* @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.

@SinceKotlin("1.4")

@WasExperimental(ExperimentalStdlibApi::class)

@Suppress("EXTENSION\_SHADOWED\_BY\_MEMBER", "NOTHING\_TO\_INLINE")

```
public actual inline operator fun
String Builder.set(index: Int, value: Char) = this.set(index, value)
```

Replaces characters in the specified range of this string builder with characters in the specified string [value] and returns this instance.

\* @param startIndex the beginning (inclusive) of the range to replace.

\* @param endIndex the end (exclusive) of the range to replace.

\* @param value the string to replace with.

\* @throws IndexOutOfBoundsException or [IllegalArgumentException] if [startIndex] is less than zero, greater than the length of this string builder, or `startIndex > endIndex`.

@SinceKotlin("1.4")

@WasExperimental(ExperimentalStdlibApi::class)

@Suppress("EXTENSION\_SHADOWED\_BY\_MEMBER", "NOTHING\_TO\_INLINE")

```
public actual inline fun
String Builder.setRange(startIndex: Int, endIndex: Int, value: String): String Builder =
 this.setRange(startIndex,
 endIndex, value)
```

Removes the character at the specified [index] from this string builder and returns this instance.

\* If the `Char` at the specified [index] is part of a supplementary code point, this method does not remove the entire supplementary character.

\* @param index the index of `Char` to remove.

\* @throws IndexOutOfBoundsException if [index] is out of bounds of this string builder.

@SinceKotlin("1.4")

@WasExperimental(ExperimentalStdlibApi::class)

@Suppress("EXTENSION\_SHADOWED\_BY\_MEMBER", "NOTHING\_TO\_INLINE")

```
public actual inline fun String Builder.deleteAt(index:
 Int): String Builder = this.deleteAt(index)
```

Removes characters in the specified range from this string builder and returns this instance.

\* @param startIndex the beginning (inclusive) of the range to remove.

\* @param endIndex the end (exclusive) of the range to remove.

\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex > endIndex`.

@SinceKotlin("1.4")

@WasExperimental(ExperimentalStdlibApi::class)

@Suppress("EXTENSION\_SHADOWED\_BY\_MEMBER", "NOTHING\_TO\_INLINE")

```
public
actual inline fun String Builder.deleteRange(startIndex: Int, endIndex: Int): String Builder =
 this.deleteRange(startIndex,
 endIndex)
```

Copies characters from this string builder into the [destination] character array.

\* @param destination the array to copy to.

\* @param destinationOffset the position in the array to copy to, 0 by default.

\* @param startIndex the beginning (inclusive) of the range to copy, 0 by default.

\* @param endIndex the end (exclusive) of the range to copy, length of this string builder by default.

\* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of

range of this string builder indices or when `startIndex > endIndex`. \n \* @throws IndexOutOfBoundsException when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset], \n \* or when that index is out of the [destination] array indices range. \n

```

*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER",
"NOTHING_TO_INLINE", "ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")\npublic actual
inline fun StringBuilder.toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0,
endIndex: Int = this.length) =\n this.toCharArray(destination, destinationOffset, startIndex, endIndex)\n\n/**\n *
Appends characters in a subarray of the specified character array [value] to this string builder and returns this
instance.\n * \n * Characters are appended in order, starting at specified [startIndex]. \n * \n * @param value the array
from which characters are appended.\n * @param startIndex the beginning (inclusive) of the subarray to append.\n *
@param endIndex the end (exclusive) of the subarray to append.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when
`startIndex > endIndex`. \n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER",
"NOTHING_TO_INLINE")\npublic actual inline fun StringBuilder.appendRange(value: CharArray, startIndex:
Int, endIndex: Int): StringBuilder =\n this.appendRange(value, startIndex, endIndex)\n\n/**\n * Appends a
subsequence of the specified character sequence [value] to this string builder and returns this instance.\n * \n *
@param value the character sequence from which a subsequence is appended.\n * @param startIndex the beginning
(inclusive) of the subsequence to append.\n * @param endIndex the end (exclusive) of the subsequence to append.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out
of range of the [value] character sequence indices or when `startIndex > endIndex`. \n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic
actual inline fun StringBuilder.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder
=\n this.appendRange(value, startIndex, endIndex)\n\n/**\n * Inserts characters in a subarray of the specified
character array [value] into this string builder at the specified [index] and returns this instance.\n * \n * The
inserted characters go in same order as in the [value] array, starting at [index]. \n * \n * @param index the position in this
string builder to insert at.\n * @param value the array from which characters are inserted.\n * @param startIndex the
beginning (inclusive) of the subarray to insert.\n * @param endIndex the end (exclusive) of the subarray to insert.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out
of range of the [value] array indices or when `startIndex > endIndex`. \n * @throws IndexOutOfBoundsException if
[index] is less than zero or greater than the length of this string builder. \n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun
StringBuilder.insertRange(index: Int, value: CharArray, startIndex: Int, endIndex: Int): StringBuilder =\n this.insertRange(index, value, startIndex, endIndex)\n\n/**\n * Inserts characters in a subsequence of the specified
character sequence [value] into this string builder at the specified [index] and returns this instance.\n * \n * The
inserted characters go in the same order as in the [value] character sequence, starting at [index]. \n * \n * @param
index the position in this string builder to insert at.\n * @param value the character sequence from which a
subsequence is inserted.\n * @param startIndex the beginning (inclusive) of the subsequence to insert.\n * @param
endIndex the end (exclusive) of the subsequence to insert.\n * \n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex]
or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`. \n *
@throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder. \n
*\n@SinceKotlin("1.4")\n@WasExperimental(ExperimentalStdlibApi::class)\n@Suppress("EXTENSION_SHA
DOWED_BY_MEMBER", "NOTHING_TO_INLINE")\npublic actual inline fun

```

```

StringBuilder.insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder =\n
this.insertRange(index, value, startIndex, endIndex)\n","/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin\n
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be\n
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.text\n\n/**\n * Returns `true` if the content of this\n
string is equal to the word `true`, ignoring case, and `false` otherwise.\n */\n@Deprecated("Use Kotlin compiler\n
1.4 to avoid deprecation warning.")\n@DeprecatedSinceKotlin(hiddenSince\n
= `1.4`)\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toBoolean(): Boolean =\n
this.toBoolean()\n\n/**\n * Returns `true` if this string is not `null` and its content is equal to the word `true`,\n
ignoring case, and `false` otherwise.\n */\n * There are also strict versions of the function available on non-nullable\n
String, [toBooleanStrict] and [toBooleanStrictOrNull].\n */\n@SinceKotlin("1.4")\npublic actual fun\n
String?.toBoolean(): Boolean = this != null && this.lowercase() == `true`\n\n/**\n * Parses the string as a signed\n
[Byte] number and returns the result.\n * @throws NumberFormatException if the string is not a valid\n
representation of a number.\n */\n\npublic actual fun String.toByte(): Byte = toByteOrNull() ?:\n
numberFormatException(this)\n\n/**\n * Parses the string as a signed [Byte] number and returns the result.\n * @throws\n
NumberFormatException if the string is not a valid representation of a number.\n * @throws\n
IllegalArgument\n
Exception when [radix] is not a valid radix for string to number conversion.\n */\n\npublic actual fun\n
String.toByte(radix: Int): Byte = toByteOrNull(radix) ?:\n numberFormatException(this)\n\n/**\n * Parses the string as a\n
[Short] number and returns the result.\n * @throws NumberFormatException if the string is not a valid\n
representation of a number.\n */\n\npublic actual fun String.toShort(): Short = toShortOrNull() ?:\n
numberFormatException(this)\n\n/**\n * Parses the string as a [Short] number and returns the result.\n * @throws\n
NumberFormatException if the string is not a valid representation of a number.\n * @throws\n
IllegalArgument\n
Exception when [radix] is not a valid radix for string to number conversion.\n */\n\npublic actual fun\n
String.toShort(radix: Int): Short = toShortOrNull(radix) ?:\n numberFormatException(this)\n\n/**\n * Parses the string as\n
an [Int] number and returns the result.\n * @throws NumberFormatException if the string is not a valid\n
representation of a number.\n */\n\npublic\n
actual fun String.toInt(): Int = toIntOrNull() ?:\n numberFormatException(this)\n\n/**\n * Parses the string as an [Int]\n
number and returns the result.\n * @throws NumberFormatException if the string is not a valid representation of a\n
number.\n * @throws IllegalArgument\n
Exception when [radix] is not a valid radix for string to number conversion.\n */\n\npublic actual fun String.toInt(radix: Int): Int = toIntOrNull(radix) ?:\n
numberFormatException(this)\n\n/**\n * Parses\n
the string as a [Long] number and returns the result.\n * @throws NumberFormatException if the string is not a\n
valid representation of a number.\n */\n\npublic actual fun String.toLong(): Long = toLongOrNull() ?:\n
numberFormatException(this)\n\n/**\n * Parses the string as a [Long] number and returns the result.\n * @throws\n
NumberFormatException if the string is not a valid representation of a number.\n * @throws\n
IllegalArgument\n
Exception when [radix] is not a valid radix for string to number conversion.\n */\n\npublic actual fun\n
String.toLong(radix:\n
Int): Long = toLongOrNull(radix) ?:\n numberFormatException(this)\n\n/**\n * Parses the string as a [Double] number\n
and returns the result.\n * @throws NumberFormatException if the string is not a valid representation of a\n
number.\n */\n\npublic actual fun String.toDouble(): Double = +(this.asDynamic()).unsafeCast<Double>().also {\n
if (it.isNaN() && !this.isNaN() || it == 0.0 && this.isBlank())\n numberFormatException(this)\n}\n\n/**\n * Parses\n
the string as a [Float] number and returns the result.\n * @throws NumberFormatException if the string is not a\n
valid representation of a number.\n */\n\n@kotlin.internal.InlineOnly\npublic actual inline fun String.toFloat(): Float\n
= toDouble().unsafeCast<Float>()\n\n/**\n * Parses the string as a [Double] number and returns the result\n * or\n
`null` if the string is not a valid representation of a number.\n */\n\npublic actual fun String.toDoubleOrNull():\n
Double? = +(this.asDynamic()).unsafeCast<Double>().takeIf {\n !it.isNaN()\n && !this.isNaN() || it == 0.0 && this.isBlank()\n}\n\n/**\n * Parses the string as a [Float] number and returns the\n
result\n * or `null` if the string is not a valid representation of a number.\n */\n\n@kotlin.internal.InlineOnly\npublic\n
actual inline fun String.toFloatOrNull(): Float? = toDoubleOrNull().unsafeCast<Float?>()\n\n/**\n * Returns a\n
string representation of this [Byte] value in the specified [radix].\n */\n * @throws IllegalArgument\n
Exception when

```

```

[radix] is not a valid radix for number to string conversion.\n
*\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Byte.toString(radix: Int): String =
this.toInt().toString(radix)\n\n/**\n * Returns a string representation of this [Short] value in the specified [radix].\n
*\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n
*\n@SinceKotlin("1.2")\n@kotlin.internal.InlineOnly\npublic actual inline fun Short.toString(radix: Int): String =
this.toInt().toString(radix)\n\n/**\n * Returns a string representation of this [Int] value in the specified [radix].\n
*\n * @throws
IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n
*\n@SinceKotlin("1.2")\npublic actual fun Int.toString(radix: Int): String =
asDynamic().toString(checkRadix(radix))\n\nprivate fun String.isNaN(): Boolean = when (this.lowercase()) {\n
"nan", "+nan", "-nan" -> true\n else -> false\n}\n\n/**\n * Checks whether the given [radix] is valid radix for
string to number and number to string conversion.\n
*\n@PublishedApi\ninternal actual fun checkRadix(radix: Int):
Int {\n if (radix !in 2..36) {\n throw IllegalArgumentException("\radix $radix was not in valid range 2..36")\n
}\n return radix\n}\n\ninternal actual fun digitOf(char: Char, radix: Int): Int = when {\n char >= '0' && char <=
'9' -> char - '0'\n char >= 'A' && char <= 'Z' -> char - 'A' + 10\n char >= 'a' && char <= 'z' -> char
- 'a' + 10\n char < "\u0080" -> -1\n char >= "\uFF21" && char <= "\uFF3A" -> char - "\uFF21" + 10 // full-width
latin capital letter\n char >= "\uFF41" && char <= "\uFF5A" -> char - "\uFF41" + 10 // full-width latin small
letter\n else -> char.digitToIntImpl()\n}.let { if (it >= radix) -1 else it }\n", "/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n
*\npackage kotlin.text\n\nimport
kotlin.js.RegExp\n\n/**\n * Provides enumeration values to use to set regular expression options.\n
*\npublic actual
enum class RegexOptions(val value: String) {\n /** Enables case-insensitive matching. *\n
IGNORE_CASE("i"),\n /** Enables multiline mode. *\n
*\n * In multiline mode the expressions `^` and `$`
match just after or just before,\n
*\n * respectively, a line terminator or the end of the input sequence.\n
*\n MULTILINE("m")\n}\n\nprivate fun Iterable<RegexOption>.toFlags(prepend: String): String =
joinToString("\n", prefix = prepend) { it.value }\n\n/**\n * Represents the results from a single capturing group
within a [MatchResult] of [Regex].\n
*\n * @param value The value of captured group.\n
*\npublic actual data
class MatchGroup(actual val value: String)\n\n/**\n * Returns a named group with the specified [name].\n
*\n * @return An instance of [MatchGroup] if the group with the specified [name] was matched or `null` otherwise.\n
*\n * @throws IllegalArgumentException if there is no group with the specified [name] defined in the regex pattern.\n
*\n * @throws UnsupportedOperationException if this match group collection doesn't support getting match groups by
name.\n
*\n * for example, when it's not supported by the current platform.\n
*\n@SinceKotlin("1.7")\npublic
operator fun MatchGroupCollection.get(name: String): MatchGroup? {\n val namedGroups = this as?
MatchNamedGroupCollection\n
?: throw UnsupportedOperationException("\Retrieving groups by name is not supported on this platform.")\n\n
return namedGroups[name]\n}\n\n/**\n * Represents a compiled regular expression.\n
*\n * Provides functions to
match strings in text with a pattern, replace the found occurrences and split text around matches.\n
*\n * For pattern
syntax reference see [MDN RegExp](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp#Special_characters_meaning_in_regular_expressions)\n
*\n * and
[http://www.w3schools.com/jsref/jsref_obj_regexp.asp](https://www.w3schools.com/jsref/jsref_obj_regexp.asp).\n
*\n * Note that `RegExp` objects under the hood are constructed with [the `u`
flag](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp/unicode)\n
*\n * that
enables Unicode-related features in regular expressions. This also makes the pattern syntax more strict,\n
*\n * for
example, prohibiting unnecessary escape
sequences.\n
*\n * @constructor Creates a regular expression from the specified [pattern] string and the specified
set of [options].\n
*\npublic actual class Regex actual constructor(pattern: String, options: Set<RegexOption>)\n
{\n\n /** Creates a regular expression from the specified [pattern] string and the specified single [option]. *\n

```



treated as a part of group reference. Subsequent digits are incorporated into `index` only if they would form a valid group reference. Only the digits '0'..'9' are considered as potential components of the group reference.

Note that indexes of captured groups start from

1, and the group with index 0 is the whole match. In case of `\${name}`, the `name` can consist of latin letters 'a'..'z' and 'A'..'Z', or digits '0'..'9'. The first character must be a letter. Backslash character '\' can be used to include the succeeding character as a literal in the replacement string, e.g., `\\$` or `\\`.

[Regex.escapeReplacement] can be used if [replacement] have to be treated as a literal string. @param input the char sequence to find matches of this regular expression in @param replacement the expression to replace found matches with @return the result of replacing each occurrence of this regular expression in [input] with the result of evaluating the [replacement] expression @throws RuntimeException if

[replacement] expression is malformed, or capturing group with specified `name` or `index` does not exist

```
public actual fun replace(input: CharSequence, replacement: String): String {
 if (!replacement.contains("\\\\") && !replacement.contains('$')) {
 return input.toString().nativeReplace(nativePattern, replacement)
 }
 return replace(input) {
 substituteGroupRefs(it, replacement)
 }
}

/** Replaces all occurrences of this regular expression in the specified [input] string with the result of the given function [transform] that takes [MatchResult] and returns a string to be used as a replacement for that match.

public actual fun replace(
 input: CharSequence, transform: (MatchResult) -> CharSequence): String {
 var match = find(input)
 if (match == null) return input.toString()
 var lastStart = 0
 val length = input.length
 val sb = StringBuilder(length)
 do {
 val foundMatch = match!!
 sb.append(input, lastStart, foundMatch.range.start)
 sb.append(transform(foundMatch))
 lastStart = foundMatch.range.endInclusive + 1
 match = foundMatch.next()
 } while (lastStart < length && match != null)
 if (lastStart < length) {
 sb.append(input, lastStart, length)
 }
 return sb.toString()
}

/** Replaces the first occurrence of this regular expression in the specified [input] string with specified [replacement] expression.

The replacement string may contain references to the captured groups during a match. Occurrences of `${name}` or `${index}` in the replacement string will be substituted with the subsequences corresponding to the captured groups with the specified name or index.

In case of `${index}`, the first digit after '$' is always treated as a part of group reference. Subsequent digits are incorporated into `index` only if they would form a valid group reference. Only the digits '0'..'9' are considered as potential components of the group
```

```
reference. Note that indexes of captured groups start from 1, and the group with index 0 is the whole match.

In case of `${name}`, the `name` can consist of latin letters 'a'..'z' and 'A'..'Z', or digits '0'..'9'. The first character must be a letter.

Backslash character '\' can be used to include the succeeding character as a literal in the replacement string, e.g., `\$` or `\\`.

[Regex.escapeReplacement] can be used if [replacement] have to be treated as a literal string.

@param input the char sequence to find a match of this regular expression in @param replacement the expression to replace the found match with @return the result of replacing the first occurrence of this regular expression in [input] with the result of evaluating the [replacement] expression @throws RuntimeException if [replacement] expression is malformed, or capturing group with specified `name` or `index` does not exist
```

```
public actual fun replaceFirst(input: CharSequence, replacement: String): String {
 if (!replacement.contains("\\\\") && !replacement.contains('$')) {
 val nonGlobalOptions = options.toFlags("\\u")
 return input.toString().nativeReplace(RegExp(pattern, nonGlobalOptions), replacement)
 }
 val match = find(input) ?: return input.toString()
 return buildString {
 append(input.substring(0, match.range.first))
 append(substituteGroupRefs(match, replacement))
 append(input.substring(match.range.last + 1, input.length))
 }
}

/** Splits the [input] CharSequence to a list of strings around matches of this regular expression.

@param limit Non-negative value specifying the maximum number of substrings the string can be split to. Zero by default means no limit is set.

@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual
```





```

with name {$name} does not exist")\n\n val value = groups[name]\n return if (value ==
undefined) null else MatchGroup(value as String)\n }\n }\n\n private fun
hasOwnPrototypeProperty(o: Any?, name: String): Boolean {\n return
js("Object").prototype.hasOwnProperty.call(o, name).unsafeCast<Boolean>()\n }\n\n private var
groupValues_: List<String>? = null\n\n override val groupValues: List<String>\n get() {\n if
(groupValues_ == null) {\n groupValues_ = object : AbstractList<String>() {\n
 override val size: Int get() = match.length\n override fun get(index: Int): String =
match[index] ?: ""\n }\n }\n return groupValues_!!\n }\n\n override fun
next(): MatchResult? =\n nextPattern.findNext(input, if (range.isEmpty())
advanceToNextCharacter(range.start) else range.endInclusive + 1, nextPattern)\n\n private fun
advanceToNextCharacter(index: Int): Int {\n if (index < input.lastIndex) {\n val code1 =
input.asDynamic().charCodeAt(index).unsafeCast<Int>()\n if (code1 in 0xD800..0xDBFF) {\n
 val code2 = input.asDynamic().charCodeAt(index + 1).unsafeCast<Int>()\n if (code2 in
0xDC00..0xDFFF) {\n return index + 2\n }\n }\n return index +
1\n }\n }\n\n // The same code from K/N Regex.kt\n private
fun substituteGroupRefs(match: MatchResult, replacement: String): String {\n var index = 0\n val result =
StringBuilder()\n while (index < replacement.length) {\n val char = replacement[index++]\n if (char ==
'\\') {\n if (index == replacement.length)\n throw IllegalArgumentException("The Char to be
escaped is missing")\n result.append(replacement[index++])\n } else if (char == '$') {\n if
(index == replacement.length)\n throw IllegalArgumentException("Capturing group index is
missing")\n if (replacement[index] == '{') {\n val endIndex =
replacement.readGroupName(++index)\n if (index == endIndex)\n throw
IllegalArgumentException("Named capturing group reference should have a non-empty name")\n if
(endIndex == replacement.length || replacement[endIndex] != '{')\n throw
IllegalArgumentException("Named
capturing group reference is missing trailing '}")\n val groupName = replacement.substring(index,
endIndex)\n result.append(match.groups[groupName]?.value ?: "")\n index = endIndex + 1 //
skip past '}'\n } else {\n if (replacement[index] !in '0'..'9')\n throw
IllegalArgumentException("Invalid capturing group reference")\n val groups = match.groups\n val endIndex = replacement.readGroupIndex(index, groups.size)\n val groupIndex =
replacement.substring(index, endIndex).toInt()\n if (groupIndex >= groups.size)\n throw
IndexOutOfBoundsException("Group with index $groupIndex does not exist")\n result.append(groups[groupIndex]?.value ?: "")\n index = endIndex\n }\n } else {\n
 result.append(char)\n }\n }\n return
result.toString()\n }\n\n // The name must be a legal JavaScript identifier. See https://262.ecma-
international.org/5.1/#sec-7.6\n // Don't try to validate the referenced group name as it may be time-consuming.\n // If
the name is invalid, it won't be found in `match.groups` anyway and will throw.\n // Group names in the target Regex
are validated at creation time.\n private fun String.readGroupName(startIndex: Int): Int {\n var index = startIndex\n while (index < length) {\n if (this[index] == '}')\n break\n else {\n index++\n }\n }\n return index\n }\n\n private fun String.readGroupIndex(startIndex: Int, groupCount: Int): Int {\n // at least one
digit after '$' is always captured\n var index = startIndex + 1\n var groupIndex = this[startIndex] - '0'\n //
capture the largest valid group index\n while (index < length && this[index] in '0'..'9') {\n val newGroupIndex
= (groupIndex * 10) + (this[index] - '0')\n if (newGroupIndex in 0 until groupCount) {\n groupIndex = newGroupIndex\n index++\n }\n else {\n break\n }\n }\n return index\n }
}

/*
 * Copyright 2010-2020 JetBrains s.r.o. and Kotlin
Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.
 */
@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n@file:Suppress("EXTENSI

```

```

ON_SHADOWED_BY_MEMBER")\n\npackage kotlin.text\n\nimport kotlin.contracts.*\n\n/**\n * A mutable
sequence of characters.\n *\n * String builder can be used to efficiently perform multiple string manipulation
operations.\n */\nexpect class StringBuilder : Appendable, CharSequence {\n /** Constructs an empty string
builder.\n */\n constructor()\n\n /** Constructs an empty string builder with the specified initial [capacity].\n */\n constructor(capacity: Int)\n\n /** Constructs
a string builder that contains the same characters as the specified [content] char sequence.\n */\n constructor(content: CharSequence)\n\n /** Constructs a string builder that contains the same characters as the
specified [content] string.\n */\n @SinceKotlin("1.3")\n// @ExperimentalStdlibApi\n constructor(content:
String)\n\n override val length: Int\n\n override operator fun get(index: Int): Char\n\n override fun
subSequence(startIndex: Int, endIndex: Int): CharSequence\n\n override fun append(value: Char): StringBuilder\n\n override fun append(value: CharSequence?): StringBuilder\n\n override fun append(value: CharSequence?,
startIndex: Int, endIndex: Int): StringBuilder\n\n /**\n * Reverses the contents of this string builder and returns
this instance.\n *\n * Surrogate pairs included in this string builder are treated as single characters.\n *
Therefore, the order of the high-low surrogates is never reversed.\n *\n * Note that
the reverse operation may produce new surrogate pairs that were unpaired low-surrogates and high-surrogates
before the operation.\n * For example, reversing `"\uDC00\uD800"` produces `"\uD800\uDC00"` which is a
valid surrogate pair.\n *\n * fun reverse(): StringBuilder\n */\n * Appends the string representation of the
specified object [value] to this string builder and returns this instance.\n *\n * The overall effect is exactly as if
the [value] were converted to a string by the `value.toString()` method,\n * and then that string was appended to
this string builder.\n *\n * fun append(value: Any?): StringBuilder\n */\n * Appends the string
representation of the specified boolean [value] to this string builder and returns this instance.\n *\n * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and then
that string was appended to this string builder.\n *\n * fun append(value: Boolean): StringBuilder\n */\n * Appends characters in
the specified character array [value] to this string builder and returns this instance.\n *\n * Characters are
appended in order, starting at the index 0.\n *\n * @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n fun append(value: CharArray): StringBuilder\n\n /**\n *
Appends the specified string [value] to this string builder and returns this instance.\n *\n * If [value] is `null`,
then the four characters `"\u0000\u0000\u0000\u0000"` are appended.\n *\n * @SinceKotlin("1.3")\n\n fun append(value: String?):
StringBuilder\n\n /**\n * Returns the current capacity of this string builder.\n *\n * The capacity is the
maximum length this string builder can have before an allocation occurs.\n *\n * @SinceKotlin("1.3")\n\n//
@ExperimentalStdlibApi\n @Deprecated("Obtaining StringBuilder capacity is not
supported in JS and common code.", level = DeprecationLevel.ERROR)\n fun capacity(): Int\n\n /**\n *
Ensures that the capacity of this string builder is at least equal to the specified [minimumCapacity].\n *\n * If
the current capacity is less than the [minimumCapacity], a new backing storage is allocated with greater capacity.\n *
Otherwise, this method takes no action and simply returns.\n *\n * @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n fun ensureCapacity(minimumCapacity: Int)\n\n /**\n *
Returns the index within this string builder of the first occurrence of the specified [string].\n *\n * Returns `-1`
if the specified [string] does not occur in this string builder.\n *\n * @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n fun indexOf(string: String): Int\n\n /**\n * Returns the
index within this string builder of the first occurrence of the specified [string],\n *\n * starting at the specified [startIndex].\n *\n * Returns `-1` if the specified [string] does not occur in this
string builder starting at the specified [startIndex].\n *\n * @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n fun indexOf(string: String, startIndex: Int): Int\n\n /**\n *
Returns the index within this string builder of the last occurrence of the specified [string].\n *\n * The last
occurrence of empty string `""` is considered to be at the index equal to `this.length`.\n *\n * Returns `-1` if
the specified [string] does not occur in this string builder.\n *\n * @SinceKotlin("1.4")\n\n @WasExperimental(ExperimentalStdlibApi::class)\n fun lastIndexOf(string: String): Int\n\n /**\n * Returns

```

```

the index within this string builder of the last occurrence of the specified [string],\n * starting from the specified
[startIndex] toward the beginning.\n * Returns -1 if the specified
[string] does not occur in this string builder starting at the specified [startIndex].\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun lastIndexOf(string: String, startIndex: Int): Int\n\n
/**\n * Inserts the string representation of the specified boolean [value] into this string builder at the specified
[index] and returns this instance.\n * The overall effect is exactly as if the [value] were converted to a string
by the `value.toString()` method,\n * and then that string was inserted into this string builder at the specified
[index].\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of
this string builder.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun
insert(index: Int, value: Boolean): StringBuilder\n\n /**\n * Inserts the specified character [value] into this
string builder at the specified [index]
and returns this instance.\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater
than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: Char): StringBuilder\n\n /**\n
* Inserts characters in the specified character array [value] into this string builder at the specified [index] and
returns this instance.\n * The inserted characters go in same order as in the [value] character array, starting
at [index].\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length
of this string builder.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
fun insert(index: Int, value: CharArray): StringBuilder\n\n /**\n * Inserts characters in the specified character
sequence [value] into this string builder at the specified [index] and returns this
instance.\n * The inserted characters go in the same order as in the [value] character sequence, starting at
[index].\n * @param index the position in this string builder to insert at.\n * @param value the character
sequence from which characters are inserted. If [value] is `null`, then the four characters `"\u0000\u0000\u0000\u0000"` are inserted.\n
*\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string
builder.\n * \n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun
insert(index: Int, value: CharSequence?): StringBuilder\n\n /**\n * Inserts the string representation of the
specified object [value] into this string builder at the specified [index] and returns this instance.\n * The
overall effect is exactly as if the [value] were converted to a string by the `value.toString()` method,\n * and then
that string was inserted into this string builder
at the specified [index].\n * @throws IndexOutOfBoundsException if [index] is less than zero or greater
than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: Any?): StringBuilder\n\n /**\n
* Inserts the string [value] into this string builder at the specified [index] and returns this instance.\n * If
[value] is `null`, then the four characters `"\u0000\u0000\u0000\u0000"` are inserted.\n * @throws IndexOutOfBoundsException
if [index] is less than zero or greater than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun insert(index: Int, value: String?): StringBuilder\n\n
/**\n * Sets the length of this string builder to the specified [newLength].\n * If the [newLength] is less
than the current length, it is changed to the specified [newLength].\n * Otherwise,
null characters '\u0000' are appended to this string builder until its length is less than the [newLength].\n * \n
*\n Note that in Kotlin/JS [set] operator function has non-constant execution time complexity.\n * Therefore,
increasing length of this string builder and then updating each character by index may slow down your program.\n
*\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] if [newLength] is less than zero.\n
*\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n fun setLength(newLength:
Int)\n\n /**\n * Returns a new [String] that contains characters in this string builder at [startIndex] (inclusive)
and up to the [length] (exclusive).\n * @throws IndexOutOfBoundsException if [startIndex] is less than
zero or greater than the length of this string builder.\n * \n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun substring(startIndex:

```

```

Int): String\n\n /**\n * Returns a new [String] that contains characters in this string builder at [startIndex]
(inclusive) and up to the [endIndex] (exclusive).\n *\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] or [endIndex] is out of range of this string builder indices or when
`startIndex > endIndex`.\n *\n @SinceKotlin("1.4")\n @WasExperimental(ExperimentalStdlibApi::class)\n
fun substring(startIndex: Int, endIndex: Int): String\n\n /**\n * Attempts to reduce storage used for this string
builder.\n *\n * If the backing storage of this string builder is larger than necessary to hold its current
contents,\n * then it may be resized to become more space efficient.\n * Calling this method may, but is not
required to, affect the value of the [capacity] property.\n *\n @SinceKotlin("1.4")\n
@WasExperimental(ExperimentalStdlibApi::class)\n fun trimToSize()\n\n\n/**\n * Clears
the content of this string builder making it empty and returns this instance.\n *\n * @sample
samples.text.Strings.clearStringBuilder\n *\n@SinceKotlin("1.3")\n\npublic expect fun StringBuilder.clear():
StringBuilder\n\n\n/**\n * Sets the character at the specified [index] to the specified [value].\n *\n * @throws
IndexOutOfBoundsException if [index] is out of bounds of this string builder.\n
*\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic expect operator fun
StringBuilder.set(index: Int, value: Char)\n\n\n/**\n * Replaces characters in the specified range of this string builder
with characters in the specified string [value] and returns this instance.\n *\n * @param startIndex the beginning
(inclusive) of the range to replace.\n * @param endIndex the end (exclusive) of the range to replace.\n * @param
value the string to replace with.\n *\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] if
[startIndex] is less than zero, greater than
the length of this string builder, or `startIndex > endIndex`.\n
*\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic expect fun
StringBuilder.setRange(startIndex: Int, endIndex: Int, value: String): StringBuilder\n\n\n/**\n * Removes the
character at the specified [index] from this string builder and returns this instance.\n *\n * If the `Char` at the
specified [index] is part of a supplementary code point, this method does not remove the entire supplementary
character.\n *\n * @param index the index of `Char` to remove.\n *\n * @throws IndexOutOfBoundsException if
[index] is out of bounds of this string builder.\n
*\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic expect fun
StringBuilder.deleteAt(index: Int): StringBuilder\n\n\n/**\n * Removes characters in the specified range from this
string builder and returns this instance.\n *\n * @param startIndex the beginning (inclusive) of the range to
remove.\n * @param endIndex the
end (exclusive) of the range to remove.\n *\n * @throws IndexOutOfBoundsException or
[IllegalArgumentException] when [startIndex] is out of range of this string builder indices or when `startIndex >
endIndex`.\n *\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic expect fun
StringBuilder.deleteRange(startIndex: Int, endIndex: Int): StringBuilder\n\n\n/**\n * Copies characters from this
string builder into the [destination] character array.\n *\n * @param destination the array to copy to.\n * @param
destinationOffset the position in the array to copy to, 0 by default.\n * @param startIndex the beginning (inclusive)
of the range to copy, 0 by default.\n * @param endIndex the end (exclusive) of the range to copy, length of this
string builder by default.\n *\n * @throws IndexOutOfBoundsException or [IllegalArgumentException] when
[startIndex] or [endIndex] is out of range of this string builder indices or when `startIndex > endIndex`.\n *\n
@throws
IndexOutOfBoundsException
when the subrange doesn't fit into the [destination] array starting at the specified [destinationOffset],\n *\n or when
that index is out of the [destination] array indices range.\n
*\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\npublic expect fun
StringBuilder.toCharArray(destination: CharArray, destinationOffset: Int = 0, startIndex: Int = 0, endIndex: Int =
this.length)\n\n\n/**\n * Appends characters in a subarray of the specified character array [value] to this string builder
and returns this instance.\n *\n * Characters are appended in order, starting at specified [startIndex].\n *\n * @param
value the array from which characters are appended.\n * @param startIndex the beginning (inclusive) of the
subarray to append.\n * @param endIndex the end (exclusive) of the subarray to append.\n *\n * @throws

```

IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n \* @since Kotlin("1.4")\n \* @WasExperimental(ExperimentalStdlibApi::class)\n \* public expect fun StringBuilder.appendRange(value: CharArray, startIndex: Int, endIndex: Int): StringBuilder\n \* Appends a subsequence of the specified character sequence [value] to this string builder and returns this instance.\n \* @param value the character sequence from which a subsequence is appended.\n \* @param startIndex the beginning (inclusive) of the subsequence to append.\n \* @param endIndex the end (exclusive) of the subsequence to append.\n \* Inserts characters in a subarray of the specified character array [value] into this string builder at the specified [index] and returns this instance.\n \* The inserted characters go in same order as in the [value] array, starting at [index].\n \* @param index the position in this string builder to insert at.\n \* @param value the array from which characters are inserted.\n \* @param startIndex the beginning (inclusive) of the subarray to insert.\n \* @param endIndex the end (exclusive) of the subarray to insert.\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] array indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n \* @since Kotlin("1.4")\n \* @WasExperimental(ExperimentalStdlibApi::class)\n \* public expect fun StringBuilder.insertRange(index: Int, value: CharArray, startIndex: Int, endIndex: Int): StringBuilder\n \* Inserts characters in a subsequence of the specified character sequence [value] into this string builder at the specified [index] and returns this instance.\n \* The inserted characters go in the same order as in the [value] character sequence, starting at [index].\n \* @param index the position in this string builder to insert at.\n \* @param value the character sequence from which a subsequence is inserted.\n \* @param startIndex the beginning (inclusive) of the subsequence to insert.\n \* @param endIndex the end (exclusive) of the subsequence to insert.\n \* @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the [value] character sequence indices or when `startIndex > endIndex`.\n \* @throws IndexOutOfBoundsException if [index] is less than zero or greater than the length of this string builder.\n \* @since Kotlin("1.4")\n \* @WasExperimental(ExperimentalStdlibApi::class)\n \* public expect fun StringBuilder.insertRange(index: Int, value: CharSequence, startIndex: Int, endIndex: Int): StringBuilder\n \* @Deprecated("Use append(value: Any?) instead", ReplaceWith("append(value = obj)"), DeprecationLevel.WARNING)\n \* @kotlin.internal.InlineOnly\n \* public inline fun StringBuilder.append(obj: Any?): StringBuilder = this.append(obj)\n \* Builds new string by populating newly created [StringBuilder] using provided [builderAction]\n \* and then converting it to [String].\n \* @kotlin.internal.InlineOnly\n \* public inline fun buildString(builderAction: String Builder.() -> Unit): String {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY\_ONCE) }\n return StringBuilder().apply(builderAction).toString()\n }\n \* Builds new string by populating newly created [StringBuilder] initialized with the given [capacity]\n \* using provided [builderAction] and then converting it to [String].\n \* @kotlin.internal.InlineOnly\n \* public inline fun buildString(capacity: Int, builderAction: String Builder.() -> Unit): String {\n contract { callsInPlace(builderAction, InvocationKind.EXACTLY\_ONCE) }\n return StringBuilder(capacity).apply(builderAction).toString()\n }\n \* Appends all arguments to the given String Builder.\n \* @public fun StringBuilder.append(vararg value: String?): String Builder {\n for (item in value)\n append(item)\n return this\n }\n \* Appends all arguments to the given String Builder.\n

```

*^public fun StringBuilder.append(vararg value: Any?): StringBuilder {
 for (item in value)
 append(item)
 return this
}

// KT-52336
@Deprecated("Use appendRange instead.")
ReplaceWith("this.appendRange(str, offset, offset + len)", level =
 DeprecationLevel.ERROR)
@kotlin.internal.InlineOnly
@Suppress("UNUSED_PARAMETER")
public inline fun StringBuilder.append(str: CharArray, offset: Int, len: Int): StringBuilder = throw NotImplementedError()

/**
 * Appends a line feed character
 *
 * (\\n) to this StringBuilder.
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun StringBuilder.appendLine(): StringBuilder = append("\\n")

/**
 * Appends [value] to this [StringBuilder], followed
 * by a line feed character (\\n).
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun StringBuilder.appendLine(value: CharSequence?): StringBuilder = append(value).appendLine()

/**
 * Appends [value] to this [StringBuilder], followed by a line feed character (\\n).
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun StringBuilder.appendLine(value: String?): StringBuilder = append(value).appendLine()

/**
 * Appends [value] to this [StringBuilder], followed by a
 * line feed character (\\n).
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun StringBuilder.appendLine(value: Any?): StringBuilder = append(value).appendLine()

/**
 * Appends [value] to this
 * [StringBuilder], followed by a line feed character
 *
 * (\\n).
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun StringBuilder.appendLine(value: CharArray): StringBuilder = append(value).appendLine()

/**
 * Appends [value] to this [StringBuilder], followed
 * by a line feed character (\\n).
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun StringBuilder.appendLine(value: Char): StringBuilder = append(value).appendLine()

/**
 * Appends [value] to this
 * [StringBuilder], followed by a line feed character
 *
 * (\\n).
 */
@SinceKotlin("1.4")
@kotlin.internal.InlineOnly
public inline fun StringBuilder.appendLine(value: Boolean): StringBuilder = append(value).appendLine()

/*
 * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
 * Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
 * found in the license/LICENSE.txt file.
 */
package kotlin.text
import
kotlin.js.RegExp
@kotlin.internal.InlineOnly
internal actual inline fun String.nativeIndexOf(ch:
 Char, fromIndex: Int): Int = nativeIndexOf(ch.toString(), fromIndex)
@kotlin.internal.InlineOnly
internal actual inline fun String.nativeLastIndexOf(ch: Char, fromIndex: Int): Int = nativeLastIndexOf(ch.toString(),
 fromIndex)
/**
 * Returns `true` if this string starts with the specified prefix.
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String.startsWith(prefix: String, ignoreCase: Boolean = false): Boolean {
 if (!ignoreCase)
 return nativeStartsWith(prefix, 0)
 else
 return regionMatches(0, prefix, 0, prefix.length, ignoreCase)
}

/**
 * Returns `true` if a substring of this string starting at the specified offset [startIndex] starts with the specified prefix.
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String.startsWith(prefix: String, startIndex: Int, ignoreCase: Boolean = false): Boolean {
 if (!ignoreCase)
 return nativeStartsWith(prefix, startIndex)
 else
 return regionMatches(startIndex, prefix, 0, prefix.length, ignoreCase)
}

/**
 * Returns `true` if
 * this string ends with the specified suffix.
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String.endsWith(suffix: String, ignoreCase: Boolean = false): Boolean {
 if (!ignoreCase)
 return nativeEndsWith(suffix)
 else
 return regionMatches(length - suffix.length, suffix, 0, suffix.length,
 ignoreCase)
}

@Deprecated("Use Regex.matches() instead",
 ReplaceWith("regex.toRegex().matches(this)"))
@DeprecatedSinceKotlin(warningSince = "1.6")
public fun String.matches(regex: String): Boolean {
 @Suppress("DEPRECATION")
 val result = this.match(regex)
 return result != null && result.size != 0
}

/**
 * Returns `true` if this string is empty or consists solely of
 * whitespace characters.
 */
@sample samples.text.Strings.stringIsBlank
public actual fun CharSequence.isBlank():

```

```

Boolean = length == 0 || indices.all { this[it].isWhitespace() }
}

/** Returns `true` if this string is equal to [other], optionally ignoring character case.
 * Two strings are considered to be equal if they have the same length and the same character at the same index.
 * If [ignoreCase] is true, the result of `Char.toUpperCaseChar().toLowerCaseChar()` on each character is compared.
 * @param ignoreCase `true` to ignore character case when comparing strings. By default `false`.
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String?.equals(other: String?, ignoreCase: Boolean = false): Boolean {
 if (this == null) return other == null
 if (other == null) return false
 if (!ignoreCase) return this == other
 if (this.length != other.length) return false
 for (index in 0 until this.length) {
 val thisChar = this[index]
 val otherChar = other[index]
 if (!thisChar.equals(otherChar, ignoreCase)) {
 return false
 }
 }
 return true
}

@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun CharSequence.regionMatches(thisOffset: Int, other: CharSequence, otherOffset: Int, length: Int, ignoreCase: Boolean = false): Boolean =
 regionMatchesImpl(thisOffset, other, otherOffset, length, ignoreCase)

/** Returns a copy of this string having its first letter titlecased using the rules of the default locale, or the original string if it's empty or already starts with a title case letter.
 * The title case of a character is usually the same as its upper case with several exceptions.
 * The particular list of characters with the special title case form depends on the underlying platform.
 * @sample samples.text.Strings.capitalize
 */
@Deprecated("Use replaceFirstChar instead.")
@DeprecatedSinceKotlin(warningSince = "1.5")
public actual fun String.capitalize(): String {
 return if (isEmpty()) substring(0, 1).uppercase() + substring(1) else this
}

/** Returns a copy of this string having its first letter lowercased using the rules of the default locale, or the original string if it's empty or already starts with a lower case letter.
 * @sample samples.text.Strings.decapitalize
 */
@Deprecated("Use replaceFirstChar instead.")
@DeprecatedSinceKotlin(warningSince = "1.5")
public actual fun String.decapitalize(): String {
 return if (isEmpty()) substring(0, 1).lowercase() + substring(1) else this
}

/** Returns a string containing this char sequence repeated [n] times.
 * @throws [IllegalArgumentException] when n < 0.
 * @sample samples.text.Strings.repeat
 */
public actual fun CharSequence.repeat(n: Int): String {
 require(n >= 0) { "Count 'n' must be non-negative, but was $n." }
 return when (n) {
 0 -> ""
 1 -> this.toString()
 else -> {
 var result = ""
 if (!isEmpty()) {
 var s = this.toString()
 var count = n
 while (true) {
 if ((count and 1) == 1) {
 result += s
 }
 count = count ushr 1
 if (count == 0) {
 break
 }
 s += s
 }
 return result
 }
 }
 }
}

/** Returns a new string obtained by replacing all occurrences of the [oldValue] substring in this string with the specified [newValue] string.
 * @sample samples.text.Strings.replace
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String.replace(oldValue: String, newValue: String, ignoreCase: Boolean = false): String =
 nativeReplace(Regex.escape(oldValue), if (ignoreCase) "gui" else "gu"),
 Regex.nativeEscapeReplacement(newValue)

/** Returns a new string with all occurrences of [oldChar] replaced with [newChar].
 * @sample samples.text.Strings.replace
 */
@Suppress("ACTUAL_FUNCTION_WITH_DEFAULT_ARGUMENTS")
public actual fun String.replace(oldChar: Char, newChar: Char, ignoreCase: Boolean = false): String =
 nativeReplace(Regex.escape(oldChar.toString()), if (ignoreCase) "ui" else "u"),
 Regex.nativeEscapeReplacement(newValue)
}

```

```

MENTS`)
public actual fun String.replaceFirst(oldChar: Char, newChar: Char, ignoreCase: Boolean = false):
String =
 nativeReplace(RegExp(Regex.escape(oldChar.toString()),"/")
 if (ignoreCase) `\"ui\"` else `\"u\"`, newChar.toString())
 * Copyright 2010-2019 JetBrains s.r.o. and Kotlin
 Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be
 found in the license/LICENSE.txt file.
 *^package kotlin.text$
 * Returns the negative [size] if
 [throwOnMalformed] is false, throws [CharacterCodingException] otherwise.
 *^private fun malformed(size: Int,
 index: Int, throwOnMalformed: Boolean): Int {
 if (throwOnMalformed) throw
 CharacterCodingException(`\"Malformed sequence starting at ${index - 1}`)
 return -size
 }
 * Returns
 code point corresponding to UTF-16 surrogate pair,
 * where the first of the pair is the [high] and the second is in
 the [string] at the [index].
 * Returns zero if the pair is malformed and [throwOnMalformed] is false.
 *^private
 fun codePointFromSurrogate(string: String, high: Int, index: Int, endIndex: Int, throwOnMalformed: Boolean): Int
 {
 if (high !in 0xD800..0xDBFF || index >= endIndex) {
 return malformed(0, index, throwOnMalformed)
 }
 val low = string[index].code
 if (low !in 0xDC00..0xDFFF) {
 return malformed(0, index,
 throwOnMalformed)
 }
 return 0x10000 + ((high and 0x3FF) shl 10) or (low and 0x3FF)
 }
 * Returns
 code point corresponding to UTF-8 sequence of two bytes,
 * where the first byte of the sequence is the
 [byte1] and the second byte is in the [bytes] array at the [index].
 * Returns zero if the sequence is malformed and
 [throwOnMalformed] is false.
 *^private fun codePointFrom2(bytes: ByteArray, byte1: Int, index:
 Int, endIndex: Int, throwOnMalformed: Boolean): Int {
 if (byte1 and 0x1E == 0 || index >= endIndex)
 {
 return malformed(0, index, throwOnMalformed)
 }
 val byte2 = bytes[index].toInt()
 if (byte2 and
 0xC0 != 0x80) {
 return malformed(0, index, throwOnMalformed)
 }
 return (byte1 shl 6) xor byte2 xor
 0xF8
 }
 * Returns
 code point corresponding to UTF-8 sequence of three bytes,
 * where the first byte of
 the sequence is the [byte1] and the others are in the [bytes] array starting from the [index].
 * Returns a non-
 positive value indicating number of bytes from [bytes] included in malformed sequence
 * if the sequence is
 malformed and [throwOnMalformed] is false.
 *^private fun codePointFrom3(bytes: ByteArray, byte1:
 Int, index: Int, endIndex: Int, throwOnMalformed: Boolean): Int {
 if (index >= endIndex) {
 return
 malformed(0, index, throwOnMalformed)
 }
 val byte2 = bytes[index].toInt()
 if (byte1
 and 0xF == 0) {
 if (byte2 and 0xE0 != 0xA0) {
 // Non-shortest form
 return malformed(0,
 index, throwOnMalformed)
 }
 } else if (byte1 and 0xF == 0xD) {
 if (byte2 and 0xE0 != 0x80) {
 // Surrogate code point
 return malformed(0, index, throwOnMalformed)
 }
 } else if (byte2 and
 0xC0 != 0x80) {
 return malformed(0, index, throwOnMalformed)
 }
 if (index + 1 == endIndex) {
 return
 malformed(1, index, throwOnMalformed)
 }
 val byte3 = bytes[index + 1].toInt()
 if (byte3 and
 0xC0 != 0x80) {
 return malformed(1, index, throwOnMalformed)
 }
 return (byte1 shl 12) xor (byte2
 shl 6) xor byte3 xor -0x1E080
 }
 * Returns
 code point corresponding to UTF-8 sequence of four bytes,
 * where the first byte of the sequence is the [byte1] and the others are in the [bytes] array starting from the [index].
 * Returns
 a non-positive value indicating
 number of bytes from [bytes] included in malformed sequence
 * if the sequence is malformed and
 [throwOnMalformed] is false.
 *^private fun codePointFrom4(bytes: ByteArray, byte1: Int, index:
 Int, endIndex: Int, throwOnMalformed: Boolean): Int {
 if (index >= endIndex) {
 malformed(0, index,
 throwOnMalformed)
 }
 val byte2 = bytes[index].toInt()
 if (byte1 and 0xF == 0x0) {
 if (byte2 and
 0xF0 <= 0x80) {
 // Non-shortest form
 return malformed(0, index, throwOnMalformed)
 }
 } else if (byte1 and 0xF == 0x4) {
 if (byte2 and 0xF0 != 0x80) {
 // Out of Unicode code points
 domain (larger than U+10FFFF)
 return malformed(0, index, throwOnMalformed)
 }
 } else if
 (byte1 and 0xF > 0x4) {
 return malformed(0, index, throwOnMalformed)
 } else if (byte2

```



```

and 0xC0 != 0x80) {\n return malformed(0, index, throwOnMalformed)\n }\n if (index + 1 == endIndex)\n {\n return malformed(1, index, throwOnMalformed)\n }\n val byte3 = bytes[index + 1].toInt()\n if (byte3\n and 0xC0 != 0x80) {\n return malformed(1, index, throwOnMalformed)\n }\n if (index + 2 == endIndex)\n {\n return malformed(2, index, throwOnMalformed)\n }\n val byte4 = bytes[index + 2].toInt()\n if (byte4\n and 0xC0 != 0x80) {\n return malformed(2, index, throwOnMalformed)\n }\n return (byte1 shl 18) xor\n (byte2 shl 12) xor (byte3 shl 6) xor byte4 xor 0x381F80\n}\n\n**\n * Maximum number of bytes needed to encode\n a single char.\n * Code points in `0..0x7F` are encoded in a single byte.\n * Code points in `0x80..0x7FF` are\n encoded in two bytes.\n * Code points in `0x800..0xD7FF` or in `0xE000..0xFFFF` are encoded in three bytes.\n * Surrogate code points in `0xD800..0xDFFF` are not Unicode scalar values, therefore\n aren't encoded.\n * Code points in `0x10000..0x10FFFF` are represented by a pair of surrogate `Char`s and are\n encoded in four bytes.\n *
private const val MAX_BYTES_PER_CHAR = 3\n**\n * The byte sequence a\n malformed UTF-16 char sequence is replaced by.\n *
private val REPLACEMENT_BYTE_SEQUENCE:\n ByteArray = arrayOf(0xEF.toByte(), 0xBF.toByte(), 0xBD.toByte())\n**\n * Encodes the [string] using\n UTF-8 and returns the resulting [ByteArray].\n *
 * @param string the string to encode.\n * @param startIndex the\n start offset (inclusive) of the substring to encode.\n * @param endIndex the end offset (exclusive) of the substring to\n encode.\n * @param throwOnMalformed whether to throw on malformed char sequence or replace by the\n [REPLACEMENT_BYTE_SEQUENCE].\n * @throws CharacterCodingException if the char sequence is\n malformed and [throwOnMalformed] is true.\n *
internal fun encodeUtf8(string: String, startIndex: Int, endIndex:\n Int, throwOnMalformed: Boolean): ByteArray\n {\n require(startIndex >= 0 && endIndex <= string.length && startIndex <= endIndex)\n val bytes =\n ByteArray((endIndex - startIndex) * MAX_BYTES_PER_CHAR)\n var byteIndex = 0\n var charIndex =\n startIndex\n while (charIndex < endIndex) {\n val code = string[charIndex++].code\n when {\n code < 0x80 ->\n bytes[byteIndex++] = code.toByte()\n code < 0x800 -> {\n bytes[byteIndex++] = ((code shr 6) or 0xC0).toByte()\n bytes[byteIndex++] = ((code and 0x3F) or\n 0x80).toByte()\n }\n code < 0xD800 || code >= 0xE000 -> {\n bytes[byteIndex++] = ((code\n shr 12) or 0xE0).toByte()\n bytes[byteIndex++] = (((code shr 6) and 0x3F) or 0x80).toByte()\n bytes[byteIndex++] = ((code and 0x3F) or 0x80).toByte()\n }\n else -> { // Surrogate char value\n val codePoint = codePointFromSurrogate(string, code, charIndex,\n endIndex, throwOnMalformed)\n if (codePoint <= 0) {\n bytes[byteIndex++] =\n REPLACEMENT_BYTE_SEQUENCE[0]\n bytes[byteIndex++] =\n REPLACEMENT_BYTE_SEQUENCE[1]\n bytes[byteIndex++] =\n REPLACEMENT_BYTE_SEQUENCE[2]\n } else {\n bytes[byteIndex++] = ((codePoint shr\n 18) or 0xF0).toByte()\n bytes[byteIndex++] = (((codePoint shr 12) and 0x3F) or 0x80).toByte()\n bytes[byteIndex++] = (((codePoint shr 6) and 0x3F) or 0x80).toByte()\n bytes[byteIndex++] =\n ((codePoint and 0x3F) or 0x80).toByte()\n charIndex++\n }\n }\n }\n }\n }\n return if (bytes.size == byteIndex) bytes else bytes.copyOf(byteIndex)\n}\n\n**\n * The character a malformed\n UTF-8 byte sequence is replaced by.\n *
private const val REPLACEMENT_CHAR = "\\uFFFF"\n**\n * Decodes the UTF-8 [bytes] array and returns\n the resulting [String].\n * @param bytes the byte array to decode.\n * @param startIndex the start offset\n (inclusive) of the array to be decoded.\n * @param endIndex the end offset (exclusive) of the array to be encoded.\n * @param throwOnMalformed whether to throw on malformed byte sequence or replace by the\n [REPLACEMENT_CHAR].\n * @throws CharacterCodingException if the array is malformed UTF-8 byte\n sequence and [throwOnMalformed] is true.\n *
internal fun decodeUtf8(bytes: ByteArray, startIndex: Int,\n endIndex: Int, throwOnMalformed: Boolean): String {\n require(startIndex >= 0 && endIndex <= bytes.size &&\n startIndex <= endIndex)\n val byteIndex = startIndex\n val stringBuilder = StringBuilder()\n while\n (byteIndex < endIndex) {\n val byte = bytes[byteIndex++].toInt()\n when {\n byte >= 0 ->\n stringBuilder.append(byte.toChar())\n byte shr 5 == -2 -> {\n val code = codePointFrom2(bytes,\n byte,\n
```

```

byteIndex, endIndex, throwOnMalformed)\n if (code <= 0) {\n
stringBuilder.append(REPLACEMENT_CHAR)\n byteIndex += -code\n } else {\n
stringBuilder.append(code.toChar())\n byteIndex += 1\n }\n byte shr 4 == -2 -> {\n
 val code = codePointFrom3(bytes, byte, byteIndex, endIndex, throwOnMalformed)\n if (code <= 0) {\n
 stringBuilder.append(REPLACEMENT_CHAR)\n byteIndex += -code\n } else {\n
 stringBuilder.append(code.toChar())\n byteIndex += 2\n }\n
 }\n byte shr 3 == -2 -> {\n
 val code = codePointFrom4(bytes, byte, byteIndex, endIndex, throwOnMalformed)\n if (code <= 0) {\n
 stringBuilder.append(REPLACEMENT_CHAR)\n byteIndex += -code\n } else {\n
 val high = (code - 0x10000) shr 10 or 0xD800\n val low = (code and 0x3FFF) or 0xDC00\n stringBuilder.append(high.toChar())\n stringBuilder.append(low.toChar())\n byteIndex += 3\n }\n } else -> {\n
 malformed(0, byteIndex, throwOnMalformed)\n stringBuilder.append(REPLACEMENT_CHAR)\n }\n }\n }\n return stringBuilder.toString()\n}", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\n/**\n * Returns the detailed description of this throwable with its stack trace.\n * The detailed description includes:\n * - the short description (see [Throwable.toString]) of this throwable;\n * - the complete stack trace;\n * - detailed descriptions of the exceptions that were [suppressed][suppressedExceptions] in order to deliver this exception;\n * - the detailed description of each throwable in the [Throwable.cause] chain.\n */\n\n@SinceKotlin("1.4")\npublic actual fun Throwable.stackTraceToString(): String = ExceptionTraceBuilder().buildFor(this)\n\n/**\n * Prints the [detailed description][Throwable.stackTraceToString] of this throwable to console error output.\n */\n\n@SinceKotlin("1.4")\npublic actual fun Throwable.printStackTrace() {\n console.error(this.stackTraceToString())\n}\n\n/**\n * Adds the specified exception to the list of exceptions that were suppressed in order to deliver this exception.\n */\n\n@SinceKotlin("1.4")\npublic actual fun Throwable.addSuppressed(exception: Throwable) {\n if (this !== exception) {\n val suppressed = this.asDynamic()._suppressed.unsafeCast<MutableList<Throwable>?>()\n if (suppressed == null) {\n this.asDynamic()._suppressed = mutableListOf(exception)\n } else {\n suppressed.add(exception)\n }\n }\n}\n\n/**\n * Returns a list of all exceptions that were suppressed in order to deliver this exception.\n */\n\n@SinceKotlin("1.4")\npublic actual val Throwable.suppressedExceptions: List<Throwable>\n get() {\n return this.asDynamic()._suppressed?.unsafeCast<List<Throwable>>() ?: emptyList()\n }\n}\n\nprivate class ExceptionTraceBuilder {\n private val target = StringBuilder()\n private val visited = arrayOf<Throwable>()\n private var topStack: String = ""\n private var topStackStart: Int = 0\n fun buildFor(exception: Throwable): String {\n exception.dumpFullTrace("", "")\n return target.toString()\n }\n private fun hasSeen(exception: Throwable): Boolean = visited.any { it === exception }\n private fun Throwable.dumpFullTrace(indent: String, qualifier: String) {\n this.dumpSelfTrace(indent, qualifier)\n || return\n var cause = this.cause\n while (cause != null) {\n cause.dumpSelfTrace(indent, "Caused by: ")\n cause = cause.cause\n }\n }\n private fun Throwable.dumpSelfTrace(indent: String, qualifier: String): Boolean {\n target.append(indent).append(qualifier)\n val shortInfo = this.toString()\n if (hasSeen(this)) {\n target.append("[CIRCULAR REFERENCE, SEE ABOVE: ").append(shortInfo).append("]\n")\n return false\n }\n visited.asDynamic().push(this)\n var stack = this.asDynamic().stack as String?\n if (stack != null) {\n val stackStart = stack.indexOf(shortInfo).let { if (it < 0) 0 else it + shortInfo.length }\n if (stackStart == 0) {\n target.append(shortInfo).append("\n")\n if (topStack.isEmpty()) {\n topStack = stack\n topStackStart = stackStart\n } else {\n stack = dropCommonFrames(stack, stackStart)\n }\n if (indent.isNotEmpty()) {\n // indent stack, but avoid indenting exception message lines\n val messageLines = if (stackStart == 0) 0 else

```

```

1 + shortInfo.count { c -> c == '\n' }\n stack.lineSequence().forEachIndexed { index: Int, line: String ->\n
 if (index >= messageLines) target.append(indent)\n target.append(line).append("\n")\n
 }\n } else {\n target.append(stack).append("\n")\n }\n } else {\n
target.append(shortInfo).append("\n")\n }\n val suppressed = suppressedExceptions\n if
(suppressed.isNotEmpty()) {\n val suppressedIndent = indent + "\n" for (s in suppressed) {\n
 s.dumpFullTrace(suppressedIndent, "Suppressed: ")\n }\n }\n return true\n }\n\n
private fun dropCommonFrames(stack: String, stackStart: Int): String {\n var commonFrames: Int = 0\n
var lastBreak: Int = 0\n var preLastBreak: Int = 0\n for (pos in 0 until minOf(topStack.length -
topStackStart, stack.length - stackStart)) {\n val c = stack[stack.lastIndex - pos]\n if (c !=
topStack[topStack.lastIndex - pos]) break\n if (c == '\n') {\n commonFrames += 1\n
preLastBreak = lastBreak\n lastBreak = pos\n }\n }\n if (commonFrames <= 1) return
stack\n while (preLastBreak > 0 && stack[stack.lastIndex - (preLastBreak - 1)] == '\n')\n preLastBreak -=
1\n\n // leave 1 common frame to ease matching with the top exception stack\n return
stack.dropLast(preLastBreak) + "... and ${commonFrames - 1} more common stack frames skipped"\n
}\n}", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.time\n\nimport kotlin.js.json\nimport kotlin.math.*\n\ninternal
actual inline val durationAssertionsEnabled: Boolean get() = true\n\ninternal actual fun
formatToExactDecimals(value: Double, decimals: Int): String {\n val rounded = if (decimals == 0) {\n value\n
 } else {\n val pow = 10.0.pow(decimals)\n JsMath.round(abs(value) * pow) / pow * sign(value)\n }\n
return if (abs(rounded) < 1e21) {\n // toFixed switches to scientific format after 1e21\n
rounded.asDynamic().toFixed(decimals).unsafeCast<String>()\n } else {\n // toPrecision outputs the specified
number of digits, but only for positive numbers\n val positive = abs(rounded)\n val positiveString =
positive.asDynamic().toPrecision(ceil(log10(positive)) + decimals).unsafeCast<String>()\n if (rounded < 0)
\n \-$positiveString" else positiveString\n }\n}\n\ninternal actual fun formatUpToDecimals(value: Double,
decimals: Int): String {\n return value.asDynamic().toLocaleString("en-us", json("maximumFractionDigits" to
decimals)).unsafeCast<String>()\n}\n}", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage
kotlin.time\n\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalTime::class)\npublic actual enum class
DurationUnit(internal val scale: Double) {\n /**\n * Time unit representing one nanosecond, which is 1/1000 of
a microsecond.\n */\n NANOSECONDS(1e0),\n /**\n * Time unit representing one microsecond, which is
1/1000 of a millisecond.\n */\n MICROSECONDS(1e3),\n /**\n * Time unit representing one millisecond,
which is 1/1000 of a second.\n */\n MILLISECONDS(1e6),\n
 /**\n * Time unit representing one second.\n */\n SECONDS(1e9),\n /**\n * Time unit representing
one minute.\n */\n MINUTES(60e9),\n /**\n * Time unit representing one hour.\n */\n HOURS(3600e9),\n
 /**\n * Time unit representing one day, which is always equal to 24 hours.\n */\n DAYS(86400e9);\n}\n\n@SinceKotlin("1.3")\ninternal actual fun convertDurationUnit(value: Double, sourceUnit:
DurationUnit, targetUnit: DurationUnit): Double {\n val sourceCompareTarget =
sourceUnit.scale.compareTo(targetUnit.scale)\n return when {\n sourceCompareTarget > 0 -> value *
(sourceUnit.scale / targetUnit.scale)\n sourceCompareTarget < 0 -> value / (targetUnit.scale /
sourceUnit.scale)\n else -> value\n }\n}\n\n@SinceKotlin("1.5")\ninternal actual fun
convertDurationUnitOverflow(value: Long, sourceUnit: DurationUnit, targetUnit: DurationUnit): Long {\n val
sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n
return when {\n sourceCompareTarget > 0 -> value * (sourceUnit.scale / targetUnit.scale).toLong()\n
sourceCompareTarget < 0 -> value / (targetUnit.scale / sourceUnit.scale).toLong()\n else -> value\n
}\n}\n\n@SinceKotlin("1.5")\ninternal actual fun convertDurationUnit(value: Long, sourceUnit: DurationUnit,
targetUnit: DurationUnit): Long {\n val sourceCompareTarget = sourceUnit.scale.compareTo(targetUnit.scale)\n

```

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return when { \n sourceCompareTarget > 0 -> { \n val scale = (sourceUnit.scale /
targetUnit.scale).toLong() \n val result = value * scale \n when { \n result / scale == value ->
result \n value > 0 -> Long.MAX_VALUE \n else -> Long.MIN_VALUE \n } \n } \n
sourceCompareTarget < 0 -> value / (targetUnit.scale / sourceUnit.scale).toLong() \n else -> value \n
} \n} \n \n \n", /* \n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin
Programming Language contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file. \n */ \n \n \n package kotlin.time \n \n \n import
org.w3c.performance.GlobalPerformance \n \n \n import org.w3c.performance.Performance \n \n \n import
kotlin.math.truncate \n \n \n import kotlin.time.Duration.Companion.milliseconds \n \n \n import
kotlin.time.TimeSource.Monotonic.ValueTimeMark \n \n \n @Suppress("ACTUAL_WITHOUT_EXPECT") //
visibility \n \n \n internal actual typealias ValueTimeMarkReading = Any \n \n \n @ExperimentalTime \n \n \n internal interface
DefaultTimeSource : TimeSource.WithComparableMarks { \n override fun markNow(): ValueTimeMark \n fun
elapsedFrom(timeMark: ValueTimeMark): Duration \n fun differenceBetween(one: ValueTimeMark, another:
ValueTimeMark): Duration \n fun adjustReading(timeMark: ValueTimeMark, duration: Duration):
ValueTimeMark \n } \n \n \n @SinceKotlin("1.3") \n \n @ExperimentalTime \n \n \n internal actual object MonotonicTimeSource
: DefaultTimeSource, TimeSource.WithComparableMarks
{ // TODO: interface should not be required here \n \n private val actualSource: DefaultTimeSource = run { \n
val isNode: Boolean = js("typeof process !== 'undefined' && process.versions && !process.versions.node") \n
if (isNode) \n HrTimeSource(js("process").unsafeCast<Process>()) \n else \n js("typeof self !==
'undefined' ? self : globalThis").unsafeCast<GlobalPerformance?>().performance \n
 ?.let(::PerformanceTimeSource) \n ?: DateNowTimeSource \n } \n \n actual override fun markNow():
ValueTimeMark = actualSource.markNow() \n actual override fun elapsedFrom(timeMark: ValueTimeMark):
Duration = actualSource.elapsedFrom(timeMark) \n actual override fun differenceBetween(one: ValueTimeMark,
another: ValueTimeMark): Duration = actualSource.differenceBetween(one, another) \n \n actual override fun
adjustReading(timeMark: ValueTimeMark, duration: Duration):
ValueTimeMark = \n actualSource.adjustReading(timeMark, duration) \n } \n \n \n \n internal external interface Process
{ \n fun hrtime(time: Array<Double> = definedExternally):
Array<Double> \n } \n \n \n @SinceKotlin("1.3") \n \n @ExperimentalTime \n \n \n internal class HrTimeSource(private val
process: Process) : DefaultTimeSource { \n \n override fun markNow(): ValueTimeMark =
ValueTimeMark(process.hrtime()) \n override fun elapsedFrom(timeMark: ValueTimeMark): Duration = \n
@Suppress("UNCHECKED_CAST") \n process.hrtime(timeMark.reading as Array<Double>) \n .let {
(seconds, nanos) -> seconds.toDuration(DurationUnit.SECONDS) +
nanos.toDuration(DurationUnit.NANOSECONDS) \n } \n \n @Suppress("UNCHECKED_CAST") \n override fun
differenceBetween(one: ValueTimeMark, another: ValueTimeMark): Duration { \n val (s1, n1) = one.reading as
Array<Double> \n val (s2, n2) = another.reading as Array<Double> \n return (if (s1 == s2 && n1 == n2)
Duration.ZERO else (s1 - s2).toDuration(DurationUnit.SECONDS))
+ (n1 - n2).toDuration(DurationUnit.NANOSECONDS) \n } \n \n override fun adjustReading(timeMark:
ValueTimeMark, duration: Duration): ValueTimeMark = \n @Suppress("UNCHECKED_CAST") \n
(timeMark.reading as Array<Double>).let { (seconds, nanos) -> \n duration.toComponents { _, addNanos -> \n
 val resultSeconds = sumCheckNaN(seconds + truncate(duration.toDouble(DurationUnit.SECONDS))) \n
 arrayOf<Double>(resultSeconds, if (resultSeconds.isFinite()) nanos + addNanos else 0.0) \n } \n
 }.let(TimeSource.Monotonic::ValueTimeMark) \n } \n \n \n \n override fun toString(): String =
"TimeSource(process.hrtime())" \n } \n \n \n @SinceKotlin("1.3") \n \n @ExperimentalTime \n \n \n internal class
PerformanceTimeSource(val performance: Performance) : \n DefaultTimeSource { //
AbstractDoubleTimeSource(unit = DurationUnit.MILLISECONDS) { \n private fun read(): Double =
performance.now() \n \n override fun markNow(): ValueTimeMark
= ValueTimeMark(read()) \n override fun elapsedFrom(timeMark: ValueTimeMark): Duration = (read() -
timeMark.reading as Double).milliseconds \n \n override fun differenceBetween(one: ValueTimeMark, another:

```

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ValueTimeMark): Duration {
 val ms1 = one.reading as Double
 val ms2 = another.reading as Double
 return if (ms1 == ms2) Duration.ZERO else (ms1 - ms2).milliseconds
}
override fun
adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =
ValueTimeMark(sumCheckNaN(timeMark.reading as Double +
duration.toDouble(DurationUnit.MILLISECONDS)))
override fun toString(): String =
`TimeSource(self.performance.now())`
@SinceKotlin("1.3")@ExperimentalTime
internal object
DateNowTimeSource : DefaultTimeSource {
 private fun read(): Double = kotlin.js.Date.now()
 override
fun markNow(): ValueTimeMark = ValueTimeMark(read())
 override fun elapsedFrom(timeMark:
ValueTimeMark): Duration = (read()
- timeMark.reading as Double).milliseconds
}
override fun differenceBetween(one: ValueTimeMark, another:
ValueTimeMark): Duration {
 val ms1 = one.reading as Double
 val ms2 = another.reading as Double
 return if (ms1 == ms2) Duration.ZERO else (ms1 - ms2).milliseconds
}
override fun
adjustReading(timeMark: ValueTimeMark, duration: Duration): ValueTimeMark =
ValueTimeMark(sumCheckNaN(timeMark.reading as Double +
duration.toDouble(DurationUnit.MILLISECONDS)))
override fun toString(): String =
`TimeSource(Date.now())`
private fun sumCheckNaN(value: Double): Double = value.also { if (it.isNaN())
throw IllegalArgumentException("Summing infinities of different signs") }
/*
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Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlinx.dom
import
org.w3c.dom.*
import
kotlin.contracts.*
 * Creates a new element with the specified [name].
 * The element is initialized
with the specified [init] function.
 */
@SinceKotlin("1.4")
public fun Document.createElement(name: String,
init: Element.() -> Unit): Element {
 contract { callsInPlace(init, InvocationKind.EXACTLY_ONCE) }
 return createElement(name).apply(init)
}
 * Appends a newly created element with the specified [name] to
this element.
 * The element is initialized with the specified [init] function.
 */
@SinceKotlin("1.4")
public fun Element.appendChild(name: String, init: Element.() -> Unit): Element {
 contract { callsInPlace(init, InvocationKind.EXACTLY_ONCE) }
 return
ownerDocument!!.createElement(name, init).also { appendChild(it) }
}
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Apache 2.0 license that can be found in the license/LICENSE.txt
file.
 */
package kotlinx.dom
import
org.w3c.dom.*
 * Returns true if the element has the given CSS
class style in its 'class' attribute
 */
@SinceKotlin("1.4")
fun Element.hasClass(cssClass: String): Boolean =
className.matches(`(?:^|\\s+)$cssClass(?:\\s+|$)`).toRegex()
 * Adds CSS class to element. Has no
effect if all specified classes are already in class attribute of the element
 * @return true if at least one class has
been added
 */
@SinceKotlin("1.4")
fun Element.addClass(vararg cssClasses: String): Boolean {
 val
missingClasses = cssClasses.filterNot { hasClass(it) }
 if (missingClasses.isNotEmpty()) {
 val
presentClasses = className.trim()
 className = buildString {
 append(presentClasses)
 if
(!presentClasses.isEmpty()) {
 append(" ")
 }
 missingClasses.joinTo(this, " ")
 }
 return true
 }
 return false
}
 * Removes all [cssClasses] from element. Has no effect if all specified classes are missing in class attribute of the
element
 * @return true if at least one class has been removed
 */
@SinceKotlin("1.4")
fun
Element.removeClass(vararg cssClasses: String): Boolean {
 if (cssClasses.any { hasClass(it) }) {
 val
toBeRemoved = cssClasses.toSet()
 className = className.trim().split(`(?:\\s+|)`).filter { it !in
toBeRemoved }.joinToString(" ")
 return true
 }
 return false
}
/*
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Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("StringsKt")
package
kotlin.text
 * Converts the string into a regular expression [Regex] with the default options.

```

```

*^@kotlin.internal.InlineOnly\npublic inline
fun String.toRegex(): Regex = Regex(this)\n\n/**\n * Converts the string into a regular expression [Regex] with the
specified single [option].\n *^@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(option: RegexOptions):
Regex = Regex(this, option)\n\n/**\n * Converts the string into a regular expression [Regex] with the specified set
of [options].\n *^@kotlin.internal.InlineOnly\npublic inline fun String.toRegex(options: Set<RegexOption>):
Regex = Regex(this, options)\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *^@package kotlin.dom\n\nimport org.w3c.dom.*\n\n/**\n * Gets a value indicating
whether this node is a TEXT_NODE or a CDATA_SECTION_NODE.\n *^@SinceKotlin("1.4")\npublic val
Node.isText: Boolean\n get() = nodeType == Node.TEXT_NODE || nodeType ==
Node.CDATA_SECTION_NODE\n\n/**\n *
Gets a value indicating whether this node is an [Element].\n *^@SinceKotlin("1.4")\npublic val Node.isElement:
Boolean\n get() = nodeType == Node.ELEMENT_NODE\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n *^@package kotlin.dom\n\nimport org.w3c.dom.*\n\n/**
Removes all the children from this node. *^@SinceKotlin("1.4")\npublic fun Node.clear() {\n while
(hasChildNodes()) {\n removeChild(firstChild!!)\n }\n}\n\n/**\n * Creates text node and append it to the
element.\n *^@return this element\n *^@SinceKotlin("1.4")\nfun Element.appendText(text: String): Element
{\n appendChild(ownerDocument!!.createTextNode(text))\n return this\n}\n", "/*\n * Copyright 2010-2019
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n *^@package org.w3c.dom\n\n@Deprecated("Use
UnionMessagePortOrWindowProxy instead.", ReplaceWith("UnionMessagePortOrWindowProxy"))\ntypealias
UnionMessagePortOrWindow = UnionMessagePortOrWindowProxy\n\n@Deprecated("Use `as` instead.",
ReplaceWith("`as`"))\nvar HTMLLinkElement.as_\n get() = `as`\n set(value) {\n `as` = value\n
}\n\n@Deprecated("Use `is` instead.", ReplaceWith("`is`"))\nvar ElementCreationOptions.is_\n get() = `is`\n
set(value) {\n `is` = value\n }\n", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *^@n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.khronos.webgl\n\nimport kotlin.js.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external
interface WebGLContextAttributes {\n var alpha: Boolean? /* = true */\n get() = definedExternally\n
set(value) = definedExternally\n var depth: Boolean? /* = true */\n get() = definedExternally\n
set(value) = definedExternally\n var stencil: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var antialias: Boolean? /* = true */\n get() = definedExternally\n
set(value) = definedExternally\n var premultipliedAlpha: Boolean? /* = true */\n get() = definedExternally\n
set(value) = definedExternally\n var preserveDrawingBuffer: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var preferLowPowerToHighPerformance: Boolean? /* =
false */\n get() = definedExternally\n set(value) = definedExternally\n var failIfMajorPerformanceCaveat:
Boolean? /* = false */\n get() = definedExternally\n
 set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\npublic inline fun WebGLContextAttributes(alpha:
Boolean? = true, depth: Boolean? = true, stencil: Boolean? = false, antialias: Boolean? = true, premultipliedAlpha:
Boolean? = true, preserveDrawingBuffer: Boolean? = false, preferLowPowerToHighPerformance: Boolean? = false,
failIfMajorPerformanceCaveat: Boolean? = false): WebGLContextAttributes {\n val o = js("{}")\n
o["alpha"] = alpha\n o["depth"] = depth\n o["stencil"] = stencil\n o["antialias"] = antialias\n
o["premultipliedAlpha"] = premultipliedAlpha\n o["preserveDrawingBuffer"] = preserveDrawingBuffer\n
o["preferLowPowerToHighPerformance"] = preferLowPowerToHighPerformance\n

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o["failIfMajorPerformanceCaveat"] = failIfMajorPerformanceCaveat\n return o\n}\n\npublic external abstract
class WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLBuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLBuffer)
to Kotlin\n *\npublic external abstract class WebGLBuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLFramebuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLFramebuffer) to Kotlin\n *\npublic
external abstract class WebGLFramebuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLProgram](https://developer.mozilla.org/en/docs/Web/API/WebGLProgram) to Kotlin\n *\npublic external
abstract class WebGLProgram : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLRenderbuffer](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderbuffer) to Kotlin\n *\npublic
external abstract class WebGLRenderbuffer : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLShader](https://developer.mozilla.org/en/docs/Web/API/WebGLShader) to Kotlin\n *\npublic external
abstract class WebGLShader : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLTexture](https://developer.mozilla.org/en/docs/Web/API/WebGLTexture) to Kotlin\n *\npublic
external abstract class WebGLTexture : WebGLObject\n\n/**\n * Exposes the JavaScript
[WebGLUniformLocation](https://developer.mozilla.org/en/docs/Web/API/WebGLUniformLocation) to Kotlin\n
*\npublic external abstract class WebGLUniformLocation\n\n/**\n * Exposes the JavaScript
[WebGLActiveInfo](https://developer.mozilla.org/en/docs/Web/API/WebGLActiveInfo) to Kotlin\n *\npublic
external abstract class WebGLActiveInfo {\n open val size: Int\n open val type: Int\n open val name:
String\n}\n\n/**\n * Exposes the JavaScript
[WebGLShaderPrecisionFormat](https://developer.mozilla.org/en/docs/Web/API/WebGLShaderPrecisionFormat) to
Kotlin\n *\npublic external abstract class WebGLShaderPrecisionFormat {\n open val rangeMin: Int\n open val
rangeMax: Int\n open val precision:
Int\n}\n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external interface
WebGLRenderingContextBase {\n val canvas: HTMLCanvasElement\n val drawingBufferWidth: Int\n val
drawingBufferHeight:
Int\n fun getContextAttributes(): WebGLContextAttributes?\n fun isContextLost(): Boolean\n fun
getSupportedExtensions(): Array<String>?\n fun getExtension(name: String): dynamic\n fun
activeTexture(texture: Int)\n fun attachShader(program: WebGLProgram?, shader: WebGLShader?)\n fun
bindAttribLocation(program: WebGLProgram?, index: Int, name: String)\n fun bindBuffer(target: Int, buffer:
WebGLBuffer?)\n fun bindFramebuffer(target: Int, framebuffer: WebGLFramebuffer?)\n fun
bindRenderbuffer(target: Int, renderbuffer: WebGLRenderbuffer?)\n fun bindTexture(target: Int, texture:
WebGLTexture?)\n fun blendColor(red: Float, green: Float, blue: Float, alpha: Float)\n fun
blendEquation(mode: Int)\n fun blendEquationSeparate(modeRGB: Int, modeAlpha: Int)\n fun
blendFunc(sfactor: Int, dfactor: Int)\n fun blendFuncSeparate(srcRGB: Int, dstRGB: Int, srcAlpha: Int, dstAlpha:
Int)\n fun bufferData(target: Int, size: Int, usage: Int)\n
fun bufferData(target: Int, data: BufferDataSource?, usage: Int)\n fun bufferSubData(target: Int, offset: Int, data:
BufferDataSource?)\n fun checkFramebufferStatus(target: Int): Int\n fun clear(mask: Int)\n fun clearColor(red:
Float, green: Float, blue: Float, alpha: Float)\n fun clearDepth(depth: Float)\n fun clearStencil(s: Int)\n fun
colorMask(red: Boolean, green: Boolean, blue: Boolean, alpha: Boolean)\n fun compileShader(shader:
WebGLShader?)\n fun compressedTexImage2D(target: Int, level: Int, internalformat: Int, width: Int, height: Int,
border: Int, data: ArrayBufferView)\n fun compressedTexSubImage2D(target: Int, level: Int, xoffset: Int, yoffset:
Int, width: Int, height: Int, format: Int, data: ArrayBufferView)\n fun copyTexImage2D(target: Int, level: Int,
internalformat: Int, x: Int, y: Int, width: Int, height: Int, border: Int)\n fun copyTexSubImage2D(target: Int, level:
Int, xoffset: Int, yoffset: Int, x: Int, y: Int, width: Int, height:
Int)\n fun createBuffer(): WebGLBuffer?\n fun createFramebuffer(): WebGLFramebuffer?\n fun
createProgram(): WebGLProgram?\n fun createRenderbuffer(): WebGLRenderbuffer?\n fun createShader(type:
Int): WebGLShader?\n fun createTexture(): WebGLTexture?\n fun cullFace(mode: Int)\n fun
deleteBuffer(buffer: WebGLBuffer?)\n fun deleteFramebuffer(framebuffer: WebGLFramebuffer?)\n fun

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deleteProgram(program: WebGLProgram?)\n fun deleteRenderbuffer(renderbuffer: WebGLRenderbuffer?)\n
fun deleteShader(shader: WebGLShader?)\n fun deleteTexture(texture: WebGLTexture?)\n fun depthFunc(func:
Int)\n fun depthMask(flag: Boolean)\n fun depthRange(zNear: Float, zFar: Float)\n fun detachShader(program:
WebGLProgram?, shader: WebGLShader?)\n fun disable(cap: Int)\n fun disableVertexArray(index: Int)\n
fun drawArrays(mode: Int, first: Int, count: Int)\n fun drawElements(mode: Int, count: Int, type: Int, offset: Int)\n
fun enable(cap:
Int)\n fun enableVertexArray(index: Int)\n fun finish()\n fun flush()\n fun
framebufferRenderbuffer(target: Int, attachment: Int, renderbuffertarget: Int, renderbuffer: WebGLRenderbuffer?)\n
fun framebufferTexture2D(target: Int, attachment: Int, textarget: Int, texture: WebGLTexture?, level: Int)\n fun
frontFace(mode: Int)\n fun generateMipmap(target: Int)\n fun getActiveAttrib(program: WebGLProgram?,
index: Int): WebGLActiveInfo?\n fun getActiveUniform(program: WebGLProgram?, index: Int):
WebGLActiveInfo?\n fun getAttachedShaders(program: WebGLProgram?): Array<WebGLShader>?\n fun
getAttribLocation(program: WebGLProgram?, name: String): Int\n fun getBufferParameter(target: Int, pname:
Int): Any?\n fun getParameter(pname: Int): Any?\n fun getError(): Int\n fun
getFramebufferAttachmentParameter(target: Int, attachment: Int, pname: Int): Any?\n fun
getProgramParameter(program: WebGLProgram?, pname: Int): Any?\n fun getProgramInfoLog(program:
WebGLProgram?): String?\n fun getRenderbufferParameter(target: Int, pname: Int): Any?\n fun
getShaderParameter(shader: WebGLShader?, pname: Int): Any?\n fun getShaderPrecisionFormat(shaderType: Int,
precisionType: Int): WebGLShaderPrecisionFormat?\n fun getShaderInfoLog(shader: WebGLShader?): String?\n
fun getShaderSource(shader: WebGLShader?): String?\n fun getTexParameter(target: Int, pname: Int): Any?\n
fun getUniform(program: WebGLProgram?, location: WebGLUniformLocation?): Any?\n fun
getUniformLocation(program: WebGLProgram?, name: String): WebGLUniformLocation?\n fun
getVertexAttrib(index: Int, pname: Int): Any?\n fun getVertexAttribOffset(index: Int, pname: Int): Int\n fun
hint(target: Int, mode: Int)\n fun isBuffer(buffer: WebGLBuffer?): Boolean\n fun isEnabled(cap: Int): Boolean\n
fun isFramebuffer(framebuffer: WebGLFramebuffer?): Boolean\n fun isProgram(program: WebGLProgram?):
Boolean\n fun isRenderbuffer(renderbuffer:
WebGLRenderbuffer?): Boolean\n fun isShader(shader: WebGLShader?): Boolean\n fun isTexture(texture:
WebGLTexture?): Boolean\n fun lineWidth(width: Float)\n fun linkProgram(program: WebGLProgram?)\n
fun pixelStorei(pname: Int, param: Int)\n fun polygonOffset(factor: Float, units: Float)\n fun readPixels(x: Int, y:
Int, width: Int, height: Int, format: Int, type: Int, pixels: ArrayBufferView?)\n fun renderbufferStorage(target: Int,
internalformat: Int, width: Int, height: Int)\n fun sampleCoverage(value: Float, invert: Boolean)\n fun scissor(x:
Int, y: Int, width: Int, height: Int)\n fun shaderSource(shader: WebGLShader?, source: String)\n fun
stencilFunc(func: Int, ref: Int, mask: Int)\n fun stencilFuncSeparate(face: Int, func: Int, ref: Int, mask: Int)\n fun
stencilMask(mask: Int)\n fun stencilMaskSeparate(face: Int, mask: Int)\n fun stencilOp(fail: Int, zfail: Int, zpass:
Int)\n fun stencilOpSeparate(face: Int, fail: Int, zfail: Int,
zpass: Int)\n fun texImage2D(target: Int, level: Int, internalformat: Int, width: Int, height: Int, border: Int, format:
Int, type: Int, pixels: ArrayBufferView?)\n fun texImage2D(target: Int, level: Int, internalformat: Int, format: Int,
type: Int, source: TexImageSource?)\n fun texParameterf(target: Int, pname: Int, param: Float)\n fun
texParameteri(target: Int, pname: Int, param: Int)\n fun texSubImage2D(target: Int, level: Int, xoffset: Int, yoffset:
Int, width: Int, height: Int, format: Int, type: Int, pixels: ArrayBufferView?)\n fun texSubImage2D(target: Int,
level: Int, xoffset: Int, yoffset: Int, format: Int, type: Int, source: TexImageSource?)\n fun uniform1f(location:
WebGLUniformLocation?, x: Float)\n fun uniform1fv(location: WebGLUniformLocation?, v: Float32Array)\n
fun uniform1fv(location: WebGLUniformLocation?, v: Array<Float>)\n fun uniform1i(location:
WebGLUniformLocation?, x: Int)\n fun uniform1iv(location: WebGLUniformLocation?, v:
Int32Array)\n fun uniform1iv(location: WebGLUniformLocation?, v: Array<Int>)\n fun uniform2f(location:
WebGLUniformLocation?, x: Float, y: Float)\n fun uniform2fv(location: WebGLUniformLocation?, v:
Float32Array)\n fun uniform2fv(location: WebGLUniformLocation?, v: Array<Float>)\n fun
uniform2i(location: WebGLUniformLocation?, x: Int, y: Int)\n fun uniform2iv(location:

```



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WebGLUniformLocation?, v: Int32Array)\n fun uniform2iv(location: WebGLUniformLocation?, v: Array<Int>)\n
fun uniform3f(location: WebGLUniformLocation?, x: Float, y: Float, z: Float)\n fun uniform3fv(location:
WebGLUniformLocation?, v: Float32Array)\n fun uniform3fv(location: WebGLUniformLocation?, v:
Array<Float>)\n fun uniform3i(location: WebGLUniformLocation?, x: Int, y: Int, z: Int)\n fun
uniform3iv(location: WebGLUniformLocation?, v: Int32Array)\n fun uniform3iv(location:
WebGLUniformLocation?, v: Array<Int>)\n fun uniform4f(location: WebGLUniformLocation?, x: Float, y: Float,
z: Float, w: Float)\n fun uniform4fv(location: WebGLUniformLocation?, v: Float32Array)\n fun
uniform4fv(location: WebGLUniformLocation?, v: Array<Float>)\n fun uniform4i(location:
WebGLUniformLocation?, x: Int, y: Int, z: Int, w: Int)\n fun uniform4iv(location: WebGLUniformLocation?, v:
Int32Array)\n fun uniform4iv(location: WebGLUniformLocation?, v: Array<Int>)\n fun
uniformMatrix2fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun
uniformMatrix2fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
uniformMatrix3fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun
uniformMatrix3fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
uniformMatrix4fv(location: WebGLUniformLocation?, transpose: Boolean, value: Float32Array)\n fun
uniformMatrix4fv(location: WebGLUniformLocation?, transpose: Boolean, value: Array<Float>)\n fun
useProgram(program:
WebGLProgram?)\n fun validateProgram(program: WebGLProgram?)\n fun vertexAttrib1f(index: Int, x:
Float)\n fun vertexAttrib1fv(index: Int, values: dynamic)\n fun vertexAttrib2f(index: Int, x: Float, y: Float)\n
fun vertexAttrib2fv(index: Int, values: dynamic)\n fun vertexAttrib3f(index: Int, x: Float, y: Float, z: Float)\n fun
vertexAttrib3fv(index: Int, values: dynamic)\n fun vertexAttrib4f(index: Int, x: Float, y: Float, z: Float, w: Float)\n
fun vertexAttrib4fv(index: Int, values: dynamic)\n fun vertexAttribPointer(index: Int, size: Int, type: Int,
normalized: Boolean, stride: Int, offset: Int)\n fun viewport(x: Int, y: Int, width: Int, height: Int)\n\n companion
object {\n val DEPTH_BUFFER_BIT: Int\n val STENCIL_BUFFER_BIT: Int\n val
COLOR_BUFFER_BIT: Int\n val POINTS: Int\n val LINES: Int\n val LINE_LOOP: Int\n val
LINE_STRIP: Int\n val TRIANGLES: Int\n val TRIANGLE_STRIP:
Int\n val TRIANGLE_FAN: Int\n val ZERO: Int\n val ONE: Int\n val SRC_COLOR: Int\n
val ONE_MINUS_SRC_COLOR: Int\n val SRC_ALPHA: Int\n val ONE_MINUS_SRC_ALPHA: Int\n
val DST_ALPHA: Int\n val ONE_MINUS_DST_ALPHA: Int\n val DST_COLOR: Int\n val
ONE_MINUS_DST_COLOR: Int\n val SRC_ALPHA_SATURATE: Int\n val FUNC_ADD: Int\n val
BLEND_EQUATION: Int\n val BLEND_EQUATION_RGB: Int\n val BLEND_EQUATION_ALPHA:
Int\n val FUNC_SUBTRACT: Int\n val FUNC_REVERSE_SUBTRACT: Int\n val
BLEND_DST_RGB: Int\n val BLEND_SRC_RGB: Int\n val BLEND_DST_ALPHA: Int\n val
BLEND_SRC_ALPHA: Int\n val CONSTANT_COLOR: Int\n val ONE_MINUS_CONSTANT_COLOR:
Int\n val CONSTANT_ALPHA: Int\n val ONE_MINUS_CONSTANT_ALPHA: Int\n val
BLEND_COLOR: Int\n val ARRAY_BUFFER: Int\n val ELEMENT_ARRAY_BUFFER: Int\n val
ARRAY_BUFFER_BINDING:
Int\n val ELEMENT_ARRAY_BUFFER_BINDING: Int\n val STREAM_DRAW: Int\n val
STATIC_DRAW: Int\n val DYNAMIC_DRAW: Int\n val BUFFER_SIZE: Int\n val
BUFFER_USAGE: Int\n val CURRENT_VERTEX_ATTRIB: Int\n val FRONT: Int\n val BACK:
Int\n val FRONT_AND_BACK: Int\n val CULL_FACE: Int\n val BLEND: Int\n val DITHER:
Int\n val STENCIL_TEST: Int\n val DEPTH_TEST: Int\n val SCISSOR_TEST: Int\n val
POLYGON_OFFSET_FILL: Int\n val SAMPLE_ALPHA_TO_COVERAGE: Int\n val
SAMPLE_COVERAGE: Int\n val NO_ERROR: Int\n val INVALID_ENUM: Int\n val
INVALID_VALUE: Int\n val INVALID_OPERATION: Int\n val OUT_OF_MEMORY: Int\n val CW:
Int\n val CCW: Int\n val LINE_WIDTH: Int\n val ALIASED_POINT_SIZE_RANGE: Int\n val
ALIASED_LINE_WIDTH_RANGE: Int\n val CULL_FACE_MODE: Int\n val FRONT_FACE: Int\n

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 val DEPTH_RANGE: Int\n val DEPTH_WRITEMASK: Int\n val DEPTH_CLEAR_VALUE: Int\n
 val DEPTH_FUNC: Int\n val STENCIL_CLEAR_VALUE: Int\n val STENCIL_FUNC: Int\n val
 STENCIL_FAIL: Int\n val STENCIL_PASS_DEPTH_FAIL: Int\n val STENCIL_PASS_DEPTH_PASS:
 Int\n val STENCIL_REF: Int\n val STENCIL_VALUE_MASK: Int\n val STENCIL_WRITEMASK:
 Int\n val STENCIL_BACK_FUNC: Int\n val STENCIL_BACK_FAIL: Int\n val
 STENCIL_BACK_PASS_DEPTH_FAIL: Int\n val STENCIL_BACK_PASS_DEPTH_PASS: Int\n val
 STENCIL_BACK_REF: Int\n val STENCIL_BACK_VALUE_MASK: Int\n val
 STENCIL_BACK_WRITEMASK: Int\n val VIEWPORT: Int\n val SCISSOR_BOX: Int\n val
 COLOR_CLEAR_VALUE: Int\n val COLOR_WRITEMASK: Int\n val UNPACK_ALIGNMENT: Int\n
 val PACK_ALIGNMENT: Int\n val MAX_TEXTURE_SIZE: Int\n val MAX_VIEWPORT_DIMS: Int\n
 val SUBPIXEL_BITS: Int\n
 val RED_BITS: Int\n val GREEN_BITS: Int\n val BLUE_BITS: Int\n val ALPHA_BITS: Int\n
 val DEPTH_BITS: Int\n val STENCIL_BITS: Int\n val POLYGON_OFFSET_UNITS: Int\n val
 POLYGON_OFFSET_FACTOR: Int\n val TEXTURE_BINDING_2D: Int\n val SAMPLE_BUFFERS:
 Int\n val SAMPLES: Int\n val SAMPLE_COVERAGE_VALUE: Int\n val
 SAMPLE_COVERAGE_INVERT: Int\n val COMPRESSED_TEXTURE_FORMATS: Int\n val
 DONT_CARE: Int\n val FASTEST: Int\n val NICEST: Int\n val GENERATE_MIPMAP_HINT: Int\n
 val BYTE: Int\n val UNSIGNED_BYTE: Int\n val SHORT: Int\n val UNSIGNED_SHORT: Int\n
 val INT: Int\n val UNSIGNED_INT: Int\n val FLOAT: Int\n val DEPTH_COMPONENT: Int\n
 val ALPHA: Int\n val RGB: Int\n val RGBA: Int\n val LUMINANCE: Int\n val
 LUMINANCE_ALPHA: Int\n val UNSIGNED_SHORT_4_4_4_4: Int\n val
 UNSIGNED_SHORT_5_5_5_1:
 Int\n val UNSIGNED_SHORT_5_6_5: Int\n val FRAGMENT_SHADER: Int\n val
 VERTEX_SHADER: Int\n val MAX_VERTEX_ATTRIBS: Int\n val
 MAX_VERTEX_UNIFORM_VECTORS: Int\n val MAX_VARYING_VECTORS: Int\n val
 MAX_COMBINED_TEXTURE_IMAGE_UNITS: Int\n val MAX_VERTEX_TEXTURE_IMAGE_UNITS:
 Int\n val MAX_TEXTURE_IMAGE_UNITS: Int\n val MAX_FRAGMENT_UNIFORM_VECTORS: Int\n
 val SHADER_TYPE: Int\n val DELETE_STATUS: Int\n val LINK_STATUS: Int\n val
 VALIDATE_STATUS: Int\n val ATTACHED_SHADERS: Int\n val ACTIVE_UNIFORMS: Int\n val
 ACTIVE_ATTRIBUTES: Int\n val SHADING_LANGUAGE_VERSION: Int\n val
 CURRENT_PROGRAM: Int\n val NEVER: Int\n val LESS: Int\n val EQUAL: Int\n val
 LEQUAL: Int\n val GREATER: Int\n val NOTEQUAL: Int\n val GEQUAL: Int\n val ALWAYS:
 Int\n val KEEP: Int\n val REPLACE: Int\n val
 INCR: Int\n val DECR: Int\n val INVERT: Int\n val INCR_WRAP: Int\n val DECR_WRAP: Int\n
 val VENDOR: Int\n val RENDERER: Int\n val VERSION: Int\n val NEAREST: Int\n val
 LINEAR: Int\n val NEAREST_MIPMAP_NEAREST: Int\n val LINEAR_MIPMAP_NEAREST: Int\n
 val NEAREST_MIPMAP_LINEAR: Int\n val LINEAR_MIPMAP_LINEAR: Int\n val
 TEXTURE_MAG_FILTER: Int\n val TEXTURE_MIN_FILTER: Int\n val TEXTURE_WRAP_S: Int\n
 val TEXTURE_WRAP_T: Int\n val TEXTURE_2D: Int\n val TEXTURE: Int\n val
 TEXTURE_CUBE_MAP: Int\n val TEXTURE_BINDING_CUBE_MAP: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_X: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_X: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Y: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Y: Int\n val
 TEXTURE_CUBE_MAP_POSITIVE_Z: Int\n val TEXTURE_CUBE_MAP_NEGATIVE_Z: Int\n val
 MAX_CUBE_MAP_TEXTURE_SIZE: Int\n
 val TEXTURE0: Int\n val TEXTURE1: Int\n val TEXTURE2: Int\n val TEXTURE3: Int\n
 val TEXTURE4: Int\n val TEXTURE5: Int\n val TEXTURE6: Int\n val TEXTURE7: Int\n val
 TEXTURE8: Int\n val TEXTURE9: Int\n val TEXTURE10: Int\n val TEXTURE11: Int\n val
 TEXTURE12: Int\n val TEXTURE13: Int\n val TEXTURE14: Int\n val TEXTURE15: Int\n val

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TEXTURE16: Int\n val TEXTURE17: Int\n val TEXTURE18: Int\n val TEXTURE19: Int\n val  
 TEXTURE20: Int\n val TEXTURE21: Int\n val TEXTURE22: Int\n val TEXTURE23: Int\n val  
 TEXTURE24: Int\n val TEXTURE25: Int\n val TEXTURE26: Int\n val TEXTURE27: Int\n val  
 TEXTURE28: Int\n val TEXTURE29: Int\n val TEXTURE30: Int\n val TEXTURE31: Int\n val  
 ACTIVE\_TEXTURE: Int\n val REPEAT: Int\n val CLAMP\_TO\_EDGE: Int\n val  
 MIRRORED\_REPEAT:  
 Int\n val FLOAT\_VEC2: Int\n val FLOAT\_VEC3: Int\n val FLOAT\_VEC4: Int\n val  
 INT\_VEC2: Int\n val INT\_VEC3: Int\n val INT\_VEC4: Int\n val BOOL: Int\n val BOOL\_VEC2:  
 Int\n val BOOL\_VEC3: Int\n val BOOL\_VEC4: Int\n val FLOAT\_MAT2: Int\n val  
 FLOAT\_MAT3: Int\n val FLOAT\_MAT4: Int\n val SAMPLER\_2D: Int\n val SAMPLER\_CUBE:  
 Int\n val VERTEX\_ATTRIB\_ARRAY\_ENABLED: Int\n val VERTEX\_ATTRIB\_ARRAY\_SIZE: Int\n  
 val VERTEX\_ATTRIB\_ARRAY\_STRIDE: Int\n val VERTEX\_ATTRIB\_ARRAY\_TYPE: Int\n val  
 VERTEX\_ATTRIB\_ARRAY\_NORMALIZED: Int\n val VERTEX\_ATTRIB\_ARRAY\_POINTER: Int\n  
 val VERTEX\_ATTRIB\_ARRAY\_BUFFER\_BINDING: Int\n val  
 IMPLEMENTATION\_COLOR\_READ\_TYPE: Int\n val IMPLEMENTATION\_COLOR\_READ\_FORMAT:  
 Int\n val COMPILE\_STATUS: Int\n val LOW\_FLOAT: Int\n val MEDIUM\_FLOAT: Int\n val  
 HIGH\_FLOAT: Int\n val LOW\_INT: Int\n  
 val MEDIUM\_INT: Int\n val HIGH\_INT: Int\n val FRAMEBUFFER: Int\n val  
 RENDERBUFFER: Int\n val RGBA4: Int\n val RGB5\_A1: Int\n val RGB565: Int\n val  
 DEPTH\_COMPONENT16: Int\n val STENCIL\_INDEX: Int\n val STENCIL\_INDEX8: Int\n val  
 DEPTH\_STENCIL: Int\n val RENDERBUFFER\_WIDTH: Int\n val RENDERBUFFER\_HEIGHT: Int\n  
 val RENDERBUFFER\_INTERNAL\_FORMAT: Int\n val RENDERBUFFER\_RED\_SIZE: Int\n val  
 RENDERBUFFER\_GREEN\_SIZE: Int\n val RENDERBUFFER\_BLUE\_SIZE: Int\n val  
 RENDERBUFFER\_ALPHA\_SIZE: Int\n val RENDERBUFFER\_DEPTH\_SIZE: Int\n val  
 RENDERBUFFER\_STENCIL\_SIZE: Int\n val FRAMEBUFFER\_ATTACHMENT\_OBJECT\_TYPE: Int\n  
 val FRAMEBUFFER\_ATTACHMENT\_OBJECT\_NAME: Int\n val  
 FRAMEBUFFER\_ATTACHMENT\_TEXTURE\_LEVEL: Int\n val  
 FRAMEBUFFER\_ATTACHMENT\_TEXTURE\_CUBE\_MAP\_FACE: Int\n val COLOR\_ATTACHMENT0:  
 Int\n val DEPTH\_ATTACHMENT: Int\n  
 val STENCIL\_ATTACHMENT: Int\n val DEPTH\_STENCIL\_ATTACHMENT: Int\n val NONE: Int\n  
 val FRAMEBUFFER\_COMPLETE: Int\n val FRAMEBUFFER\_INCOMPLETE\_ATTACHMENT: Int\n  
 val FRAMEBUFFER\_INCOMPLETE\_MISSING\_ATTACHMENT: Int\n val  
 FRAMEBUFFER\_INCOMPLETE\_DIMENSIONS: Int\n val FRAMEBUFFER\_UNSUPPORTED: Int\n  
 val FRAMEBUFFER\_BINDING: Int\n val RENDERBUFFER\_BINDING: Int\n val  
 MAX\_RENDERBUFFER\_SIZE: Int\n val INVALID\_FRAMEBUFFER\_OPERATION: Int\n val  
 UNPACK\_FLIP\_Y\_WEBGL: Int\n val UNPACK\_PREMULTIPLY\_ALPHA\_WEBGL: Int\n val  
 CONTEXT\_LOST\_WEBGL: Int\n val UNPACK\_COLORSPACE\_CONVERSION\_WEBGL: Int\n val  
 BROWSER\_DEFAULT\_WEBGL: Int\n } \n } \n \n /\*\* \n \* Exposes the JavaScript  
 [WebGLRenderingContext](https://developer.mozilla.org/en/docs/Web/API/WebGLRenderingContext) to Kotlin \n  
 \* \n public external abstract class WebGLRenderingContext : WebGLRenderingContextBase, RenderingContext { \n  
 companion object  
 { \n val DEPTH\_BUFFER\_BIT: Int\n val STENCIL\_BUFFER\_BIT: Int\n val  
 COLOR\_BUFFER\_BIT: Int\n val POINTS: Int\n val LINES: Int\n val LINE\_LOOP: Int\n val  
 LINE\_STRIP: Int\n val TRIANGLES: Int\n val TRIANGLE\_STRIP: Int\n val TRIANGLE\_FAN:  
 Int\n val ZERO: Int\n val ONE: Int\n val SRC\_COLOR: Int\n val ONE\_MINUS\_SRC\_COLOR:  
 Int\n val SRC\_ALPHA: Int\n val ONE\_MINUS\_SRC\_ALPHA: Int\n val DST\_ALPHA: Int\n val  
 ONE\_MINUS\_DST\_ALPHA: Int\n val DST\_COLOR: Int\n val ONE\_MINUS\_DST\_COLOR: Int\n  
 val SRC\_ALPHA\_SATURATE: Int\n val FUNC\_ADD: Int\n val BLEND\_EQUATION: Int\n val

BLEND\_EQUATION\_RGB: Int\n     val BLEND\_EQUATION\_ALPHA: Int\n     val FUNC\_SUBTRACT:  
 Int\n     val FUNC\_REVERSE\_SUBTRACT: Int\n     val BLEND\_DST\_RGB: Int\n     val  
 BLEND\_SRC\_RGB: Int\n     val BLEND\_DST\_ALPHA: Int\n     val BLEND\_SRC\_ALPHA: Int\n  
    val CONSTANT\_COLOR: Int\n     val ONE\_MINUS\_CONSTANT\_COLOR: Int\n     val  
 CONSTANT\_ALPHA: Int\n     val ONE\_MINUS\_CONSTANT\_ALPHA: Int\n     val BLEND\_COLOR: Int\n  
    val ARRAY\_BUFFER: Int\n     val ELEMENT\_ARRAY\_BUFFER: Int\n     val  
 ARRAY\_BUFFER\_BINDING: Int\n     val ELEMENT\_ARRAY\_BUFFER\_BINDING: Int\n     val  
 STREAM\_DRAW: Int\n     val STATIC\_DRAW: Int\n     val DYNAMIC\_DRAW: Int\n     val  
 BUFFER\_SIZE: Int\n     val BUFFER\_USAGE: Int\n     val CURRENT\_VERTEX\_ATTRIB: Int\n     val  
 FRONT: Int\n     val BACK: Int\n     val FRONT\_AND\_BACK: Int\n     val CULL\_FACE: Int\n     val  
 BLEND: Int\n     val DITHER: Int\n     val STENCIL\_TEST: Int\n     val DEPTH\_TEST: Int\n     val  
 SCISSOR\_TEST: Int\n     val POLYGON\_OFFSET\_FILL: Int\n     val SAMPLE\_ALPHA\_TO\_COVERAGE:  
 Int\n     val SAMPLE\_COVERAGE: Int\n     val NO\_ERROR: Int\n     val INVALID\_ENUM: Int\n     val  
 INVALID\_VALUE: Int\n     val INVALID\_OPERATION:  
 Int\n     val OUT\_OF\_MEMORY: Int\n     val CW: Int\n     val CCW: Int\n     val LINE\_WIDTH: Int\n  
 val ALIASED\_POINT\_SIZE\_RANGE: Int\n     val ALIASED\_LINE\_WIDTH\_RANGE: Int\n     val  
 CULL\_FACE\_MODE: Int\n     val FRONT\_FACE: Int\n     val DEPTH\_RANGE: Int\n     val  
 DEPTH\_WRITEMASK: Int\n     val DEPTH\_CLEAR\_VALUE: Int\n     val DEPTH\_FUNC: Int\n     val  
 STENCIL\_CLEAR\_VALUE: Int\n     val STENCIL\_FUNC: Int\n     val STENCIL\_FAIL: Int\n     val  
 STENCIL\_PASS\_DEPTH\_FAIL: Int\n     val STENCIL\_PASS\_DEPTH\_PASS: Int\n     val STENCIL\_REF:  
 Int\n     val STENCIL\_VALUE\_MASK: Int\n     val STENCIL\_WRITEMASK: Int\n     val  
 STENCIL\_BACK\_FUNC: Int\n     val STENCIL\_BACK\_FAIL: Int\n     val  
 STENCIL\_BACK\_PASS\_DEPTH\_FAIL: Int\n     val STENCIL\_BACK\_PASS\_DEPTH\_PASS: Int\n     val  
 STENCIL\_BACK\_REF: Int\n     val STENCIL\_BACK\_VALUE\_MASK: Int\n     val  
 STENCIL\_BACK\_WRITEMASK: Int\n     val VIEWPORT: Int\n  
    val SCISSOR\_BOX: Int\n     val COLOR\_CLEAR\_VALUE: Int\n     val COLOR\_WRITEMASK: Int\n  
 val UNPACK\_ALIGNMENT: Int\n     val PACK\_ALIGNMENT: Int\n     val MAX\_TEXTURE\_SIZE: Int\n  
    val MAX\_VIEWPORT\_DIMS: Int\n     val SUBPIXEL\_BITS: Int\n     val RED\_BITS: Int\n     val  
 GREEN\_BITS: Int\n     val BLUE\_BITS: Int\n     val ALPHA\_BITS: Int\n     val DEPTH\_BITS: Int\n     val  
 STENCIL\_BITS: Int\n     val POLYGON\_OFFSET\_UNITS: Int\n     val POLYGON\_OFFSET\_FACTOR: Int\n  
    val TEXTURE\_BINDING\_2D: Int\n     val SAMPLE\_BUFFERS: Int\n     val SAMPLES: Int\n     val  
 SAMPLE\_COVERAGE\_VALUE: Int\n     val SAMPLE\_COVERAGE\_INVERT: Int\n     val  
 COMPRESSED\_TEXTURE\_FORMATS: Int\n     val DONT\_CARE: Int\n     val FASTEST: Int\n     val  
 NICEST: Int\n     val GENERATE\_MIPMAP\_HINT: Int\n     val BYTE: Int\n     val UNSIGNED\_BYTE:  
 Int\n     val SHORT: Int\n     val UNSIGNED\_SHORT: Int\n     val INT: Int\n     val  
 UNSIGNED\_INT: Int\n     val FLOAT: Int\n     val DEPTH\_COMPONENT: Int\n     val ALPHA: Int\n  
 val RGB: Int\n     val RGBA: Int\n     val LUMINANCE: Int\n     val LUMINANCE\_ALPHA: Int\n     val  
 UNSIGNED\_SHORT\_4\_4\_4\_4: Int\n     val UNSIGNED\_SHORT\_5\_5\_5\_1: Int\n     val  
 UNSIGNED\_SHORT\_5\_6\_5: Int\n     val FRAGMENT\_SHADER: Int\n     val VERTEX\_SHADER: Int\n  
 val MAX\_VERTEX\_ATTRIBS: Int\n     val MAX\_VERTEX\_UNIFORM\_VECTORS: Int\n     val  
 MAX\_VARYING\_VECTORS: Int\n     val MAX\_COMBINED\_TEXTURE\_IMAGE\_UNITS: Int\n     val  
 MAX\_VERTEX\_TEXTURE\_IMAGE\_UNITS: Int\n     val MAX\_TEXTURE\_IMAGE\_UNITS: Int\n     val  
 MAX\_FRAGMENT\_UNIFORM\_VECTORS: Int\n     val SHADER\_TYPE: Int\n     val DELETE\_STATUS:  
 Int\n     val LINK\_STATUS: Int\n     val VALIDATE\_STATUS: Int\n     val ATTACHED\_SHADERS: Int\n  
    val ACTIVE\_UNIFORMS: Int\n     val ACTIVE\_ATTRIBUTES: Int\n     val  
 SHADING\_LANGUAGE\_VERSION: Int\n     val CURRENT\_PROGRAM:  
 Int\n     val NEVER: Int\n     val LESS: Int\n     val EQUAL: Int\n     val LEQUAL: Int\n     val  
 GREATER: Int\n     val NOTEQUAL: Int\n     val GEQUAL: Int\n     val ALWAYS: Int\n     val KEEP:

Int\n val REPLACE: Int\n val INCR: Int\n val DECR: Int\n val INVERT: Int\n val  
 INCR\_WRAP: Int\n val DECR\_WRAP: Int\n val VENDOR: Int\n val RENDERER: Int\n val  
 VERSION: Int\n val NEAREST: Int\n val LINEAR: Int\n val NEAREST\_MIPMAP\_NEAREST: Int\n  
 val LINEAR\_MIPMAP\_NEAREST: Int\n val NEAREST\_MIPMAP\_LINEAR: Int\n val  
 LINEAR\_MIPMAP\_LINEAR: Int\n val TEXTURE\_MAG\_FILTER: Int\n val TEXTURE\_MIN\_FILTER:  
 Int\n val TEXTURE\_WRAP\_S: Int\n val TEXTURE\_WRAP\_T: Int\n val TEXTURE\_2D: Int\n  
 val TEXTURE: Int\n val TEXTURE\_CUBE\_MAP: Int\n val TEXTURE\_BINDING\_CUBE\_MAP: Int\n  
 val TEXTURE\_CUBE\_MAP\_POSITIVE\_X: Int\n  
 val TEXTURE\_CUBE\_MAP\_NEGATIVE\_X: Int\n val TEXTURE\_CUBE\_MAP\_POSITIVE\_Y: Int\n  
 val TEXTURE\_CUBE\_MAP\_NEGATIVE\_Y: Int\n val TEXTURE\_CUBE\_MAP\_POSITIVE\_Z: Int\n val  
 TEXTURE\_CUBE\_MAP\_NEGATIVE\_Z: Int\n val MAX\_CUBE\_MAP\_TEXTURE\_SIZE: Int\n val  
 TEXTURE0: Int\n val TEXTURE1: Int\n val TEXTURE2: Int\n val TEXTURE3: Int\n val  
 TEXTURE4: Int\n val TEXTURE5: Int\n val TEXTURE6: Int\n val TEXTURE7: Int\n val  
 TEXTURE8: Int\n val TEXTURE9: Int\n val TEXTURE10: Int\n val TEXTURE11: Int\n val  
 TEXTURE12: Int\n val TEXTURE13: Int\n val TEXTURE14: Int\n val TEXTURE15: Int\n val  
 TEXTURE16: Int\n val TEXTURE17: Int\n val TEXTURE18: Int\n val TEXTURE19: Int\n val  
 TEXTURE20: Int\n val TEXTURE21: Int\n val TEXTURE22: Int\n val TEXTURE23: Int\n val  
 TEXTURE24: Int\n val TEXTURE25: Int\n val  
 TEXTURE26: Int\n val TEXTURE27: Int\n val TEXTURE28: Int\n val TEXTURE29: Int\n val  
 TEXTURE30: Int\n val TEXTURE31: Int\n val ACTIVE\_TEXTURE: Int\n val REPEAT: Int\n  
 val CLAMP\_TO\_EDGE: Int\n val MIRRORED\_REPEAT: Int\n val FLOAT\_VEC2: Int\n val  
 FLOAT\_VEC3: Int\n val FLOAT\_VEC4: Int\n val INT\_VEC2: Int\n val INT\_VEC3: Int\n val  
 INT\_VEC4: Int\n val BOOL: Int\n val BOOL\_VEC2: Int\n val BOOL\_VEC3: Int\n val  
 BOOL\_VEC4: Int\n val FLOAT\_MAT2: Int\n val FLOAT\_MAT3: Int\n val FLOAT\_MAT4: Int\n  
 val SAMPLER\_2D: Int\n val SAMPLER\_CUBE: Int\n val VERTEX\_ATTRIB\_ARRAY\_ENABLED:  
 Int\n val VERTEX\_ATTRIB\_ARRAY\_SIZE: Int\n val VERTEX\_ATTRIB\_ARRAY\_STRIDE: Int\n  
 val VERTEX\_ATTRIB\_ARRAY\_TYPE: Int\n val VERTEX\_ATTRIB\_ARRAY\_NORMALIZED: Int\n  
 val VERTEX\_ATTRIB\_ARRAY\_POINTER: Int\n val VERTEX\_ATTRIB\_ARRAY\_BUFFER\_BINDING:  
 Int\n val IMPLEMENTATION\_COLOR\_READ\_TYPE: Int\n val  
 IMPLEMENTATION\_COLOR\_READ\_FORMAT: Int\n val COMPILE\_STATUS: Int\n val  
 LOW\_FLOAT: Int\n val MEDIUM\_FLOAT: Int\n val HIGH\_FLOAT: Int\n val LOW\_INT: Int\n  
 val MEDIUM\_INT: Int\n val HIGH\_INT: Int\n val FRAMEBUFFER: Int\n val RENDERBUFFER:  
 Int\n val RGBA4: Int\n val RGB5\_A1: Int\n val RGB565: Int\n val DEPTH\_COMPONENT16:  
 Int\n val STENCIL\_INDEX: Int\n val STENCIL\_INDEX8: Int\n val DEPTH\_STENCIL: Int\n val  
 RENDERBUFFER\_WIDTH: Int\n val RENDERBUFFER\_HEIGHT: Int\n val  
 RENDERBUFFER\_INTERNAL\_FORMAT: Int\n val RENDERBUFFER\_RED\_SIZE: Int\n val  
 RENDERBUFFER\_GREEN\_SIZE: Int\n val RENDERBUFFER\_BLUE\_SIZE: Int\n val  
 RENDERBUFFER\_ALPHA\_SIZE: Int\n val RENDERBUFFER\_DEPTH\_SIZE: Int\n val  
 RENDERBUFFER\_STENCIL\_SIZE: Int\n val FRAMEBUFFER\_ATTACHMENT\_OBJECT\_TYPE:  
 Int\n val FRAMEBUFFER\_ATTACHMENT\_OBJECT\_NAME: Int\n val  
 FRAMEBUFFER\_ATTACHMENT\_TEXTURE\_LEVEL: Int\n val  
 FRAMEBUFFER\_ATTACHMENT\_TEXTURE\_CUBE\_MAP\_FACE: Int\n val COLOR\_ATTACHMENT0:  
 Int\n val DEPTH\_ATTACHMENT: Int\n val STENCIL\_ATTACHMENT: Int\n val  
 DEPTH\_STENCIL\_ATTACHMENT: Int\n val NONE: Int\n val FRAMEBUFFER\_COMPLETE: Int\n  
 val FRAMEBUFFER\_INCOMPLETE\_ATTACHMENT: Int\n val  
 FRAMEBUFFER\_INCOMPLETE\_MISSING\_ATTACHMENT: Int\n val  
 FRAMEBUFFER\_INCOMPLETE\_DIMENSIONS: Int\n val FRAMEBUFFER\_UNSUPPORTED: Int\n  
 val FRAMEBUFFER\_BINDING: Int\n val RENDERBUFFER\_BINDING: Int\n val

```

MAX_RENDERBUFFER_SIZE: Int\n val INVALID_FRAMEBUFFER_OPERATION: Int\n val
UNPACK_FLIP_Y_WEBGL: Int\n val UNPACK_PREMULTIPLY_ALPHA_WEBGL: Int\n val
CONTEXT_LOST_WEBGL: Int\n val UNPACK_COLORSPACE_CONVERSION_WEBGL: Int\n val
BROWSER_DEFAULT_WEBGL: Int\n
}\n}\n\n/**\n * Exposes the JavaScript
[WebGLContextEvent](https://developer.mozilla.org/en/docs/Web/API/WebGLContextEvent) to Kotlin\n
*/\npublic external open class WebGLContextEvent(type: String, eventInit: WebGLContextEventInit =
definedExternally) : Event {\n open val statusMessage: String\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface WebGLContextEventInit : EventInit {\n var statusMessage: String? /* = \"\" */\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
WebGLContextEventInit(statusMessage: String? = \"\", bubbles: Boolean? = false, cancelable: Boolean? = false,
composed: Boolean? = false): WebGLContextEventInit {\n val o = js(\"({})\")\n o[\"statusMessage\"] =
statusMessage\n o[\"bubbles\"]
= bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n return o\n}\n\n/**\n * Exposes
the JavaScript [ArrayBuffer](https://developer.mozilla.org/en/docs/Web/API/ArrayBuffer) to Kotlin\n
*/\npublic
external open class ArrayBuffer(length: Int) : BufferDataSource {\n open val byteLength: Int\n fun slice(begin:
Int, end: Int = definedExternally): ArrayBuffer\n\n companion object {\n fun isView(value: Any?): Boolean\n
 }\n}\n\n/**\n * Exposes the JavaScript
[ArrayBufferView](https://developer.mozilla.org/en/docs/Web/API/ArrayBufferView) to Kotlin\n
*/\npublic
external interface ArrayBufferView : BufferDataSource {\n val buffer: ArrayBuffer\n val byteOffset: Int\n val
byteLength: Int\n}\n\n/**\n * Exposes the JavaScript
[Int8Array](https://developer.mozilla.org/en/docs/Web/API/Int8Array) to Kotlin\n
*/\npublic external open class
Int8Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array: Int8Array)\n
 constructor(array: Array<Byte>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length:
Int = definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n override val byteOffset:
Int\n override val byteLength: Int\n fun set(array: Int8Array, offset: Int = definedExternally)\n fun set(array:
Array<Byte>, offset: Int = definedExternally)\n fun subarray(start: Int, end: Int): Int8Array\n companion
object {\n val BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Int8Array.set(index: Int,
value: Byte) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Uint8Array](https://developer.mozilla.org/en/docs/Web/API/Uint8Array) to Kotlin\n
*/\npublic external open class Uint8Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array:
Uint8Array)\n constructor(array: Array<Byte>)\n constructor(buffer: ArrayBuffer, byteOffset: Int =
definedExternally, length: Int = definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n
override val byteOffset: Int\n override val byteLength: Int\n fun set(array: Uint8Array, offset: Int =
definedExternally)\n fun set(array: Array<Byte>, offset: Int = definedExternally)\n fun subarray(start: Int, end:
Int): Uint8Array\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint8Array.get(index: Int):
Byte = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint8Array.set(index: Int,
value: Byte) { asDynamic()[index]
= value }\n\n/**\n * Exposes the JavaScript
[Uint8ClampedArray](https://developer.mozilla.org/en/docs/Web/API/Uint8ClampedArray) to Kotlin\n
*/\npublic

```

```

external open class Uint8ClampedArray : ArrayBufferView {
 constructor(length: Int)
 constructor(array: Uint8ClampedArray)
 constructor(array: Array<Byte>)
 constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
 open val length: Int
 override val buffer: ArrayBuffer
 override val byteOffset: Int
 override val byteLength: Int
 fun set(array: Uint8ClampedArray, offset: Int = definedExternally)
 fun set(array: Array<Byte>, offset: Int = definedExternally)
 fun subarray(start: Int, end: Int): Uint8ClampedArray
 companion object {
 val BYTES_PER_ELEMENT: Int
 }
}
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint8ClampedArray.get(index: Int): Byte = asDynamic()[index]
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint8ClampedArray.set(index: Int, value: Byte) { asDynamic()[index] = value }
/** Exposes the JavaScript [Int16Array](https://developer.mozilla.org/en/docs/Web/API/Int16Array) to Kotlin */
public external open class Int16Array : ArrayBufferView {
 constructor(length: Int)
 constructor(array: Int16Array)
 constructor(array: Array<Short>)
 constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
 open val length: Int
 override val buffer: ArrayBuffer
 override val byteOffset: Int
 override val byteLength: Int
 fun set(array: Int16Array, offset: Int = definedExternally)
 fun set(array: Array<Short>, offset: Int = definedExternally)
 fun subarray(start: Int, end: Int): Int16Array
 companion object {
 val BYTES_PER_ELEMENT: Int
 }
}
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Int16Array.get(index: Int): Short = asDynamic()[index]
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Int16Array.set(index: Int, value: Short) { asDynamic()[index] = value }
/** Exposes the JavaScript [Uint16Array](https://developer.mozilla.org/en/docs/Web/API/Uint16Array) to Kotlin */
public external open class Uint16Array : ArrayBufferView {
 constructor(length: Int)
 constructor(array: Uint16Array)
 constructor(array: Array<Short>)
 constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
 open val length: Int
 override val buffer: ArrayBuffer
 override val byteOffset: Int
 override val byteLength: Int
 fun set(array: Uint16Array, offset: Int = definedExternally)
 fun set(array: Array<Short>, offset: Int = definedExternally)
 fun subarray(start: Int, end: Int): Uint16Array
 companion object {
 val BYTES_PER_ELEMENT: Int
 }
}
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint16Array.get(index: Int): Short = asDynamic()[index]
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Uint16Array.set(index: Int, value: Short) { asDynamic()[index] = value }
/** Exposes the JavaScript [Int32Array](https://developer.mozilla.org/en/docs/Web/API/Int32Array) to Kotlin */
public external open class Int32Array : ArrayBufferView {
 constructor(length: Int)
 constructor(array: Int32Array)
 constructor(array: Array<Int>)
 constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int = definedExternally)
 open val length: Int
 override val buffer: ArrayBuffer
 override val byteOffset: Int
 override val byteLength: Int
 fun set(array: Int32Array, offset: Int = definedExternally)
 fun set(array: Array<Int>, offset: Int = definedExternally)
 fun subarray(start: Int, end: Int): Int32Array
 companion object {
 val BYTES_PER_ELEMENT: Int
 }
}
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Int32Array.get(index: Int): Int = asDynamic()[index]
@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Int32Array.set(index: Int, value: Int) { asDynamic()[index] = value }
/** Exposes the JavaScript [Uint32Array](https://developer.mozilla.org/en/docs/Web/API/Uint32Array) to Kotlin */
public external open class Uint32Array : ArrayBufferView {
 constructor(length: Int)
 constructor(array: Uint32Array)

```

```

constructor(array: Array<Int>)\n constructor(buffer: ArrayBuffer, byteOffset: Int = definedExternally, length: Int
= definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n override val byteOffset: Int\n
override val byteLength: Int\n fun set(array: Uint32Array, offset: Int = definedExternally)\n fun set(array:
Array<Int>, offset: Int = definedExternally)\n fun subarray(start: Int, end: Int): Uint32Array\n\n companion
object {\n val BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint32Array.get(index: Int):
Int = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Uint32Array.set(index: Int,
value: Int) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Float32Array](https://developer.mozilla.org/en/docs/Web/API/Float32Array) to Kotlin\n */\npublic external open
class Float32Array : ArrayBufferView {\n constructor(length: Int)\n constructor(array:
Float32Array)\n constructor(array: Array<Float>)\n constructor(buffer: ArrayBuffer, byteOffset: Int =
definedExternally, length: Int = definedExternally)\n open val length: Int\n override val buffer: ArrayBuffer\n
override val byteOffset: Int\n override val byteLength: Int\n fun set(array: Float32Array, offset: Int =
definedExternally)\n fun set(array: Array<Float>, offset: Int = definedExternally)\n fun subarray(start: Int, end:
Int): Float32Array\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float32Array.get(index: Int):
Float = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float32Array.set(index: Int,
value: Float) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[Float64Array](https://developer.mozilla.org/en/docs/Web/API/Float64Array)
to Kotlin\n */\npublic external open class Float64Array : ArrayBufferView {\n constructor(length: Int)\n
constructor(array: Float64Array)\n constructor(array: Array<Double>)\n constructor(buffer: ArrayBuffer,
byteOffset: Int = definedExternally, length: Int = definedExternally)\n open val length: Int\n override val buffer:
ArrayBuffer\n override val byteOffset: Int\n override val byteLength: Int\n fun set(array: Float64Array, offset:
Int = definedExternally)\n fun set(array: Array<Double>, offset: Int = definedExternally)\n fun subarray(start:
Int, end: Int): Float64Array\n\n companion object {\n val BYTES_PER_ELEMENT: Int\n }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Float64Array.get(index: Int):
Double = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator
fun Float64Array.set(index: Int, value: Double) { asDynamic()[index] = value }\n\n/**\n * Exposes the JavaScript
[DataView](https://developer.mozilla.org/en/docs/Web/API/DataView) to Kotlin\n */\npublic external open class
DataView(buffer: ArrayBuffer, byteOffset: Int = definedExternally, byteLength: Int = definedExternally) :
ArrayBufferView {\n override val buffer: ArrayBuffer\n override val byteOffset: Int\n override val
byteLength: Int\n fun getInt8(byteOffset: Int): Byte\n fun getUint8(byteOffset: Int): Byte\n fun
getInt16(byteOffset: Int, littleEndian: Boolean = definedExternally): Short\n fun getUint16(byteOffset: Int,
littleEndian: Boolean = definedExternally): Short\n fun getInt32(byteOffset: Int, littleEndian: Boolean =
definedExternally): Int\n fun getUint32(byteOffset: Int, littleEndian: Boolean = definedExternally): Int\n fun
getFloat32(byteOffset: Int, littleEndian: Boolean = definedExternally): Float\n fun getFloat64(byteOffset: Int,
littleEndian: Boolean = definedExternally): Double\n fun setInt8(byteOffset: Int, value: Byte)\n fun
setUint8(byteOffset: Int, value: Byte)\n fun setInt16(byteOffset: Int, value: Short, littleEndian: Boolean =
definedExternally)\n fun setUint16(byteOffset: Int, value: Short, littleEndian: Boolean = definedExternally)\n
fun setInt32(byteOffset: Int, value: Int, littleEndian: Boolean = definedExternally)\n fun setUint32(byteOffset: Int,
value: Int, littleEndian: Boolean = definedExternally)\n fun setFloat32(byteOffset: Int, value: Float, littleEndian:
Boolean = definedExternally)\n fun setFloat64(byteOffset: Int, value: Double, littleEndian: Boolean =
definedExternally)\n}\n\npublic external interface BufferDataSource\n\npublic external interface

```



```

TexImageSource", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt
file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for
details\n\npackage org.w3c.dom.clipboard\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external interface ClipboardEventInit : EventInit {\n var
clipboardData: DataTransfer? /* = null *\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun ClipboardEventInit(clipboardData:
DataTransfer? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
ClipboardEventInit {\n val o = js("{}")\n o["clipboardData"] = clipboardData\n o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[ClipboardEvent](https://developer.mozilla.org/en/docs/Web/API/ClipboardEvent)
to Kotlin\n *\n\npublic external open class ClipboardEvent(type: String, eventInitDict: ClipboardEventInit =
definedExternally) : Event {\n open val clipboardData: DataTransfer?\n\n companion object {\n val NONE:
Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE:
Short\n }\n}\n\n/**\n * Exposes the JavaScript
[Clipboard](https://developer.mozilla.org/en/docs/Web/API/Clipboard) to Kotlin\n *\n\npublic external abstract class
Clipboard : EventTarget {\n fun read(): Promise<DataTransfer>\n fun readText(): Promise<String>\n fun
write(data: DataTransfer): Promise<Unit>\n fun writeText(data: String): Promise<Unit>\n}\n\n\npublic external
interface ClipboardPermissionDescriptor {\n var allowWithoutGesture: Boolean? /* = false *\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
ClipboardPermissionDescriptor(allowWithoutGesture:
Boolean? = false): ClipboardPermissionDescriptor {\n val o = js("{}")\n o["allowWithoutGesture"] =
allowWithoutGesture\n return o\n}, /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.dom.css\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\n\npublic external abstract class MediaList : ItemArrayLike<String>
{\n open var mediaText: String\n fun appendMedium(medium: String)\n fun deleteMedium(medium: String)\n
\n override fun item(index: Int): String?\n}\n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun MediaList.get(index: Int):
String? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript [StyleSheet](https://developer.mozilla.org/en/docs/Web/API/StyleSheet) to Kotlin\n
*\n\npublic external abstract class StyleSheet {\n open val type: String\n open val href: String?\n open val
ownerNode: UnionElementOrProcessingInstruction?\n open val parentStyleSheet: StyleSheet?\n open val title:
String?\n open val media: MediaList\n open var disabled: Boolean\n}\n\n\n/**\n * Exposes the JavaScript
[CSSStyleSheet](https://developer.mozilla.org/en/docs/Web/API/CSSStyleSheet) to Kotlin\n *\n\npublic external
abstract class CSSStyleSheet : StyleSheet {\n open val ownerRule: CSSRule?\n open val cssRules:
CSSRuleList\n fun insertRule(rule: String, index: Int): Int\n fun deleteRule(index: Int)\n}\n\n\n/**\n * Exposes the
JavaScript [StyleSheetList](https://developer.mozilla.org/en/docs/Web/API/StyleSheetList) to Kotlin\n *\n\npublic
external abstract class StyleSheetList : ItemArrayLike<StyleSheet> {\n override fun item(index:
Int): StyleSheet?\n}\n\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun StyleSheetList.get(index: Int):
StyleSheet? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[LinkStyle](https://developer.mozilla.org/en/docs/Web/API/LinkStyle) to Kotlin\n *\n\npublic external interface
LinkStyle {\n val sheet: StyleSheet?\n get() = definedExternally\n}\n\n\n/**\n * Exposes the JavaScript
[CSSRuleList](https://developer.mozilla.org/en/docs/Web/API/CSSRuleList) to Kotlin\n *\n\npublic external abstract

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```

class CSSRuleList : ItemArrayLike<CSSRule> {\n override fun item(index: Int):
CSSRule?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun CSSRuleList.get(index: Int):
CSSRule? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[CSSRule](https://developer.mozilla.org/en/docs/Web/API/CSSRule) to Kotlin\n\n *\n\npublic external abstract class
CSSRule
{\n open val type: Short\n open var cssText: String\n open val parentRule: CSSRule?\n open val
parentStyleSheet: CSSStyleSheet?\n\n companion object {\n val STYLE_RULE: Short\n val
CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val
FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val
NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[CSSStyleRule](https://developer.mozilla.org/en/docs/Web/API/CSSStyleRule) to Kotlin\n\n *\n\npublic external
abstract class CSSStyleRule : CSSRule {\n open var selectorText: String\n open val style:
CSSStyleDeclaration\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE:
Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n
 val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n
 }\n}\n\npublic external
abstract class CSSImportRule : CSSRule {\n open val href: String\n open val media: MediaList\n open val
styleSheet: CSSStyleSheet\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE:
Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n
 val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n
 }\n}\n\n/**\n * Exposes the JavaScript
[CSSGroupingRule](https://developer.mozilla.org/en/docs/Web/API/CSSGroupingRule) to Kotlin\n\n *\n\npublic
external abstract class CSSGroupingRule : CSSRule {\n open val cssRules: CSSRuleList\n fun insertRule(rule:
String, index: Int): Int\n fun deleteRule(index: Int)\n\n companion object {\n val STYLE_RULE: Short\n
 val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val
FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n
 val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[CSSMediaRule](https://developer.mozilla.org/en/docs/Web/API/CSSMediaRule) to Kotlin\n\n *\n\npublic external
abstract class CSSMediaRule : CSSGroupingRule {\n open val media: MediaList\n\n companion object {\n
 val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val IMPORT_RULE: Short\n val
MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val PAGE_RULE: Short\n val
MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[CSSPageRule](https://developer.mozilla.org/en/docs/Web/API/CSSPageRule) to Kotlin\n\n *\n\npublic external
abstract class CSSPageRule : CSSGroupingRule {\n open var selectorText: String\n open val style:
CSSStyleDeclaration\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE:
Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE:
Short\n val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n
 }\n}\n\npublic external abstract class CSSMarginRule : CSSRule {\n open val name: String\n open val style:
CSSStyleDeclaration\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE:
Short\n val IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n
 val PAGE_RULE: Short\n val MARGIN_RULE: Short\n val NAMESPACE_RULE: Short\n
 }\n}\n\n/**\n * Exposes the JavaScript
[CSSNamespaceRule](https://developer.mozilla.org/en/docs/Web/API/CSSNamespaceRule) to Kotlin\n\n *\n\npublic
external abstract class CSSNamespaceRule : CSSRule {\n open val namespaceURI: String\n open val prefix:
String\n\n companion object {\n val STYLE_RULE: Short\n val CHARSET_RULE: Short\n val
IMPORT_RULE: Short\n val MEDIA_RULE: Short\n val FONT_FACE_RULE: Short\n val
PAGE_RULE:

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Short\n val MARGIN\_RULE: Short\n val NAMESPACE\_RULE: Short\n }n}\n/n/\*\*n \* Exposes the JavaScript [CSSStyleDeclaration](https://developer.mozilla.org/en/docs/Web/API/CSSStyleDeclaration) to Kotlin\n \*/\npublic external abstract class CSSStyleDeclaration : ItemArrayLike<String> {\n open var cssText: String\n open val parentRule: CSSRule?\n open var cssFloat: String\n open var alignContent: String\n open var alignItems: String\n open var alignSelf: String\n open var animation: String\n open var animationDelay: String\n open var animationDirection: String\n open var animationDuration: String\n open var animationFillMode: String\n open var animationIterationCount: String\n open var animationName: String\n open var animationPlayState: String\n open var animationTimingFunction: String\n open var backfaceVisibility: String\n open var background: String\n open var backgroundAttachment: String\n open var backgroundClip: String\n open var backgroundColor: String\n open var backgroundImage: String\n open var backgroundOrigin: String\n open var backgroundPosition: String\n open var backgroundRepeat: String\n open var backgroundSize: String\n open var border: String\n open var borderBottom: String\n open var borderBottomColor: String\n open var borderBottomLeftRadius: String\n open var borderBottomRightRadius: String\n open var borderBottomStyle: String\n open var borderBottomWidth: String\n open var borderCollapse: String\n open var borderColor: String\n open var borderImage: String\n open var borderImageOutset: String\n open var borderImageRepeat: String\n open var borderImageSlice: String\n open var borderImageSource: String\n open var borderImageWidth: String\n open var borderLeft: String\n open var borderLeftColor: String\n open var borderLeftStyle: String\n open var borderLeftWidth: String\n open var borderRadius: String\n open var borderRight: String\n open var borderRightColor: String\n open var borderRightStyle: String\n open var borderRightWidth: String\n open var borderSpacing: String\n open var borderStyle: String\n open var borderTop: String\n open var borderTopColor: String\n open var borderTopLeftRadius: String\n open var borderTopRightRadius: String\n open var borderTopStyle: String\n open var borderTopWidth: String\n open var borderWidth: String\n open var bottom: String\n open var boxDecorationBreak: String\n open var boxShadow: String\n open var boxSizing: String\n open var breakAfter: String\n open var breakBefore: String\n open var breakInside: String\n open var captionSide: String\n open var clear: String\n open var clip: String\n open var color: String\n open var columnCount: String\n open var columnFill: String\n open var columnGap: String\n open var columnRule: String\n open var columnRuleColor: String\n open var columnRuleStyle: String\n open var columnRuleWidth: String\n open var columnSpan: String\n open var columnWidth: String\n open var columns: String\n open var content: String\n open var counterIncrement: String\n open var counterReset: String\n open var cursor: String\n open var direction: String\n open var display: String\n open var emptyCells: String\n open var filter: String\n open var flex: String\n open var flexBasis: String\n open var flexDirection: String\n open var flexFlow: String\n open var flexGrow: String\n open var flexShrink: String\n open var flexWrap: String\n open var font: String\n open var fontFamily: String\n open var fontFeatureSettings: String\n open var fontKerning: String\n open var fontLanguageOverride: String\n open var fontSize: String\n open var fontSizeAdjust: String\n open var fontStretch: String\n open var fontStyle: String\n open var fontSynthesis: String\n open var fontVariant: String\n open var fontVariantAlternates: String\n open var fontVariantCaps: String\n open var fontVariantEastAsian: String\n open var fontVariantLigatures: String\n open var fontVariantNumeric: String\n open var fontVariantPosition: String\n open var fontWeight: String\n open var hangingPunctuation: String\n open var height: String\n open var hyphens: String\n open var imageOrientation: String\n open var imageRendering: String\n open var imageResolution: String\n open var imeMode: String\n open var justifyContent: String\n open var left: String\n open var letterSpacing: String\n open var lineBreak: String\n open var lineHeight: String\n open var listStyle: String\n open var listStyleImage: String\n open var listStylePosition: String\n open var listStyleType: String\n open var margin: String\n open var marginBottom: String\n open var marginLeft: String\n open var marginRight: String\n open var marginTop: String\n open var mark: String\n open var markAfter: String\n open var markBefore: String\n open var marks: String\n open var marqueeDirection: String\n open var

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marqueePlayCount: String\n open var marqueeSpeed: String\n open var marqueeStyle: String\n open var
mask: String\n open var maskType: String\n open var maxHeight: String\n open var maxWidth: String\n
open var minHeight: String\n open var minWidth: String\n open var navDown: String\n open var navIndex:
String\n open var navLeft: String\n open var navRight: String\n open var navUp: String\n open var objectFit:
String\n open var objectPosition: String\n open var opacity: String\n open var order: String\n open var
orphans: String\n open var outline: String\n open var outlineColor: String\n open var outlineOffset: String\n
open var outlineStyle: String\n open var outlineWidth: String\n open var overflowWrap:
String\n open var overflowX: String\n open var overflowY: String\n open var padding: String\n open var
paddingBottom: String\n open var paddingLeft: String\n open var paddingRight: String\n open var
paddingTop: String\n open var pageBreakAfter: String\n open var pageBreakBefore: String\n open var
pageBreakInside: String\n open var perspective: String\n open var perspectiveOrigin: String\n open var
phonemes: String\n open var position: String\n open var quotes: String\n open var resize: String\n open var
rest: String\n open var restAfter: String\n open var restBefore: String\n open var right: String\n open var
tabSize: String\n open var tableLayout: String\n open var textAlign: String\n open var textAlignLast: String\n
open var textCombineUpright: String\n open var textDecoration: String\n open var textDecorationColor:
String\n open var textDecorationLine: String\n open var textDecorationStyle:
String\n open var textIndent: String\n open var textJustify: String\n open var textOrientation: String\n open
var textOverflow: String\n open var textShadow: String\n open var textTransform: String\n open var
textUnderlinePosition: String\n open var top: String\n open var transform: String\n open var transformOrigin:
String\n open var transformStyle: String\n open var transition: String\n open var transitionDelay: String\n
open var transitionDuration: String\n open var transitionProperty: String\n open var transitionTimingFunction:
String\n open var unicodeBidi: String\n open var verticalAlign: String\n open var visibility: String\n open
var voiceBalance: String\n open var voiceDuration: String\n open var voicePitch: String\n open var
voicePitchRange: String\n open var voiceRate: String\n open var voiceStress: String\n open var voiceVolume:
String\n open var whiteSpace: String\n open var widows: String\n
open var width: String\n open var wordBreak: String\n open var wordSpacing: String\n open var wordWrap:
String\n open var writingMode: String\n open var zIndex: String\n open var _dashed_attribute: String\n open
var _camel_cased_attribute: String\n open var _webkit_cased_attribute: String\n fun getPropertyValue(property:
String): String\n fun getPropertyPriority(property: String): String\n fun setProperty(property: String, value:
String, priority: String = definedExternally)\n fun setPropertyValue(property: String, value: String)\n fun
setPropertyPriority(property: String, priority: String)\n fun removeProperty(property: String): String\n override
fun item(index: Int): String\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
CSSStyleDeclaration.get(index: Int): String? = asDynamic()[index]\n\npublic external interface
ElementCSSInlineStyle {\n val style: CSSStyleDeclaration\n}\n\n/**\n * Exposes the JavaScript [CSS](https://developer.mozilla.org/en/docs/Web/API/CSS) to Kotlin\n */\npublic
external abstract class CSS {\n companion object {\n fun escape(ident: String): String\n }\n}\n\npublic
external interface UnionElementOrProcessingInstruction, /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n//
See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.encryptedmedia\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\n\n/**\n * Exposes the JavaScript
[MediaKeySystemConfiguration](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemConfiguration)
to Kotlin\n */\n\npublic external interface MediaKeySystemConfiguration {\n var label: String? /* = \"\" */\n
get() = definedExternally\n set(value) = definedExternally\n var initDataTypes: Array<String>? /* =
arrayOf() */\n get() = definedExternally\n set(value) = definedExternally\n var audioCapabilities:
Array<MediaKeySystemMediaCapability>? /* = arrayOf() */\n get() = definedExternally\n set(value) =
definedExternally\n var videoCapabilities: Array<MediaKeySystemMediaCapability>? /* = arrayOf() */\n

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get() = definedExternally\n set(value) = definedExternally\n var distinctiveIdentifier:
MediaKeysRequirement? /* = MediaKeysRequirement.OPTIONAL */\n get() = definedExternally\n
set(value) = definedExternally\n var persistentState: MediaKeysRequirement? /* =
MediaKeysRequirement.OPTIONAL */\n get() = definedExternally\n set(value) = definedExternally\n
var sessionTypes: Array<String>?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun MediaKeySystemConfiguration(label:
String? = \"\", initDataTypes: Array<String>? = arrayOf(), audioCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(), videoCapabilities:
Array<MediaKeySystemMediaCapability>? = arrayOf(), distinctiveIdentifier: MediaKeysRequirement? =
MediaKeysRequirement.OPTIONAL, persistentState: MediaKeysRequirement? =
MediaKeysRequirement.OPTIONAL, sessionTypes: Array<String>? = undefined): MediaKeySystemConfiguration
{\n val o = js(\"({})\")\n o[\"label\"] = label\n o[\"initDataTypes\"] = initDataTypes\n
o[\"audioCapabilities\"] = audioCapabilities\n o[\"videoCapabilities\"] = videoCapabilities\n
o[\"distinctiveIdentifier\"] = distinctiveIdentifier\n o[\"persistentState\"] = persistentState\n o[\"sessionTypes\"]
= sessionTypes\n return o\n}\n\n\npublic external interface MediaKeySystemMediaCapability {\n var
contentType: String? /* = \"\" */\n
 get() = definedExternally\n set(value) = definedExternally\n var robustness: String? /* = \"\" */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun
MediaKeySystemMediaCapability(contentType: String? = \"\", robustness: String? = \"\"):
MediaKeySystemMediaCapability {\n val o = js(\"({})\")\n o[\"contentType\"] = contentType\n
o[\"robustness\"] = robustness\n return o\n}\n\n\n/**\n * Exposes the JavaScript
[MediaKeySystemAccess](https://developer.mozilla.org/en/docs/Web/API/MediaKeySystemAccess) to Kotlin\n
*/\n\npublic external abstract class MediaKeySystemAccess {\n open val keySystem: String\n fun
getConfiguration(): MediaKeySystemConfiguration\n fun createMediaKeys(): Promise<MediaKeys>\n}\n\n\n/**\n * Exposes the JavaScript [MediaKeys](https://developer.mozilla.org/en/docs/Web/API/MediaKeys) to Kotlin\n
*/\n\npublic external
abstract class MediaKeys {\n fun createSession(sessionType: MediaKeySessionType = definedExternally):
MediaKeySession\n fun setServerCertificate(serverCertificate: dynamic): Promise<Boolean>\n}\n\n\n/**\n * Exposes the JavaScript [MediaKeySession](https://developer.mozilla.org/en/docs/Web/API/MediaKeySession) to
Kotlin\n */\n\npublic external abstract class MediaKeySession : EventTarget {\n open val sessionId: String\n open
val expiration: Double\n open val closed: Promise<Unit>\n open val keyStatuses: MediaKeyStatusMap\n open
var onkeystatuseschange: ((Event) -> dynamic)?\n open var onmessage: ((MessageEvent) -> dynamic)?\n fun
generateRequest(initDataType: String, initData: dynamic): Promise<Unit>\n fun load(sessionId: String):
Promise<Boolean>\n fun update(response: dynamic): Promise<Unit>\n fun close(): Promise<Unit>\n fun
remove(): Promise<Unit>\n}\n\n\n/**\n * Exposes the JavaScript
[MediaKeyStatusMap](https://developer.mozilla.org/en/docs/Web/API/MediaKeyStatusMap)
to Kotlin\n */\n\npublic external abstract class MediaKeyStatusMap {\n open val size: Int\n fun has(keyId:
dynamic): Boolean\n fun get(keyId: dynamic): Any?\n}\n\n\n/**\n * Exposes the JavaScript
[MediaKeyMessageEvent](https://developer.mozilla.org/en/docs/Web/API/MediaKeyMessageEvent) to Kotlin\n
*/\n\npublic external open class MediaKeyMessageEvent(type: String, eventInitDict: MediaKeyMessageEventInit) :
Event {\n open val messageType: MediaKeyMessageType\n open val message: ArrayBuffer\n\n companion
object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\n\npublic external interface MediaKeyMessageEventInit : EventInit {\n var
messageType: MediaKeyMessageType?\n var message:
ArrayBuffer?\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun

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MediaKeyMessageEventInit(messageType: MediaKeyMessageType?, message:
 ArrayBuffer?, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
MediaKeyMessageEventInit {
 val o = js("{}")
 o["messageType"] = messageType
 o["message"] = message
 o["bubbles"] = bubbles
 o["cancelable"] = cancelable
 o["composed"] = composed
 return o
}
public external open class MediaEncryptedEvent(type: String, eventInitDict: MediaEncryptedEventInit =
 definedExternally) : Event {
 open val initDataType: String
 open val initData: ArrayBuffer?
 companion object {
 val NONE: Short
 val CAPTURING_PHASE: Short
 val AT_TARGET: Short
 val BUBBLING_PHASE: Short
 }
 public external interface MediaEncryptedEventInit : EventInit {
 var
 initDataType: String? /* = "" */
 get() = definedExternally
 set(value) = definedExternally
 var
 initData: ArrayBuffer? /* = null */
 get() = definedExternally
 set(value) =
 definedExternally
 }
 @Suppress("INVISIBLE_REFERENCE",
 "INVISIBLE_MEMBER")
 @kotlin.internal.InlineOnly
 public inline fun
MediaEncryptedEventInit(initDataType: String? = "", initData: ArrayBuffer? = null, bubbles: Boolean? = false,
 cancelable: Boolean? = false, composed: Boolean? = false): MediaEncryptedEventInit {
 val o = js("{}")
 o["initDataType"] = initDataType
 o["initData"] = initData
 o["bubbles"] = bubbles
 o["cancelable"] =
 cancelable
 o["composed"] = composed
 return o
}
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public external
interface MediaKeysRequirement {
 companion object
}
public inline val
MediaKeysRequirement.Companion.REQUIRED: MediaKeysRequirement get() =
 "required".asDynamic().unsafeCast<MediaKeysRequirement>()
public inline val
MediaKeysRequirement.Companion.OPTIONAL: MediaKeysRequirement get() =
 "optional".asDynamic().unsafeCast<MediaKeysRequirement>()
public
inline val MediaKeysRequirement.Companion.NOT_ALLOWED: MediaKeysRequirement get() = "not-
 allowed".asDynamic().unsafeCast<MediaKeysRequirement>()
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public external
interface MediaKeySessionType {
 companion object
}
public inline val
MediaKeySessionType.Companion.TEMPORARY: MediaKeySessionType get() =
 "temporary".asDynamic().unsafeCast<MediaKeySessionType>()
public inline val
MediaKeySessionType.Companion.PERSISTENT_LICENSE: MediaKeySessionType get() = "persistent-
 license".asDynamic().unsafeCast<MediaKeySessionType>()
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public external
interface MediaKeyStatus {
 companion object
}
public inline val MediaKeyStatus.Companion.USABLE:
MediaKeyStatus get() = "usable".asDynamic().unsafeCast<MediaKeyStatus>()
public
inline val MediaKeyStatus.Companion.EXPIRED: MediaKeyStatus get() =
 "expired".asDynamic().unsafeCast<MediaKeyStatus>()
public inline val
MediaKeyStatus.Companion.RELEASED: MediaKeyStatus get() =
 "released".asDynamic().unsafeCast<MediaKeyStatus>()
public inline val
MediaKeyStatus.Companion.OUTPUT_RESTRICTED: MediaKeyStatus get() = "output-
 restricted".asDynamic().unsafeCast<MediaKeyStatus>()
public inline val
MediaKeyStatus.Companion.OUTPUT_DOWNSCALED: MediaKeyStatus get() = "output-
 downscaled".asDynamic().unsafeCast<MediaKeyStatus>()
public inline val
MediaKeyStatus.Companion.STATUS_PENDING: MediaKeyStatus get() = "status-
 pending".asDynamic().unsafeCast<MediaKeyStatus>()
public inline val
MediaKeyStatus.Companion.INTERNAL_ERROR: MediaKeyStatus get() = "internal-
 error".asDynamic().unsafeCast<MediaKeyStatus>()
/* please, don't implement this interface!
*/
@JsName("null")
@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")
public
external interface MediaKeyMessageType {
 companion object
}
public inline val
MediaKeyMessageType.Companion.LICENSE_REQUEST: MediaKeyMessageType get() = "license-

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request`.asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RENEWAL: MediaKeyMessageType get() = `license-
renewal`.asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.LICENSE_RELEASE: MediaKeyMessageType get() = `license-
release`.asDynamic().unsafeCast<MediaKeyMessageType>()\n\npublic inline val
MediaKeyMessageType.Companion.INDIVIDUALIZATION_REQUEST: MediaKeyMessageType get() =
`individualization-request`.asDynamic().unsafeCast<MediaKeyMessageType>()",/*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n//
See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.events\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\n\n/**\n * Exposes the JavaScript
[UIEvent](https://developer.mozilla.org/en/docs/Web/API/UIEvent) to Kotlin\n */\n\npublic external open class
UIEvent(type: String, eventInitDict: UIEventInit = definedExternally) : Event {\n open val view: Window?\n
open val detail: Int\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n
val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n\n public external interface UIEventInit :
EventInit {\n var view: Window? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var detail: Int? /* = 0 */\n get() = definedExternally\n set(value) =
definedExternally\n }\n\n @Suppress(`INVISIBLE_REFERENCE`,
`INVISIBLE_MEMBER`)\n @kotlin.internal.InlineOnly\n public inline fun UIEventInit(view: Window? =
null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
UIEventInit {\n val o = js(`{}`)\n o[`view`] = view\n o[`detail`] = detail\n o[`bubbles`] = bubbles\n
o[`cancelable`] = cancelable\n o[`composed`] = composed\n return o\n }\n\n /**\n * Exposes the JavaScript
[FocusEvent](https://developer.mozilla.org/en/docs/Web/API/FocusEvent) to Kotlin\n */\n\n public external open class
FocusEvent(type: String, eventInitDict: FocusEventInit = definedExternally) : UIEvent {\n open val relatedTarget:
EventTarget?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n
 val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n\n public external interface FocusEventInit :
UIEventInit {\n var relatedTarget: EventTarget? /* = null */\n get() = definedExternally\n
 set(value) = definedExternally\n }\n\n @Suppress(`INVISIBLE_REFERENCE`,
`INVISIBLE_MEMBER`)\n @kotlin.internal.InlineOnly\n public
inline fun FocusEventInit(relatedTarget: EventTarget? = null, view: Window? = null, detail: Int? = 0, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): FocusEventInit {\n val o =
js(`{}`)\n o[`relatedTarget`] = relatedTarget\n o[`view`] = view\n o[`detail`] = detail\n
 o[`bubbles`] = bubbles\n o[`cancelable`] = cancelable\n o[`composed`] = composed\n
 return o\n }\n\n /**\n * Exposes the JavaScript [MouseEvent](https://developer.mozilla.org/en/docs/Web/API/MouseEvent)
to Kotlin\n */\n\n public external open class MouseEvent(type: String, eventInitDict: MouseEventInit =
definedExternally) : UIEvent, UnionElementOrMouseEvent {\n open val screenX: Int\n open val screenY: Int\n
open val clientX: Int\n open val clientY: Int\n open val ctrlKey: Boolean\n open val shiftKey: Boolean\n
open val altKey: Boolean\n open val metaKey: Boolean\n open val button: Short\n
open val buttons: Short\n open val relatedTarget: EventTarget?\n open val region: String?\n open val pageX:
Double\n open val pageY: Double\n open val x: Double\n open val y: Double\n open val offsetX: Double\n
open val offsetY: Double\n fun getModifierState(keyArg: String): Boolean\n\n companion object {\n val
NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n\n public external interface MouseEventInit : EventModifierInit {\n var
screenX: Int? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n var screenY: Int? /*
= 0 */\n get() = definedExternally\n set(value) = definedExternally\n var clientX: Int? /* = 0 */\n
 get() = definedExternally\n set(value) = definedExternally\n var clientY: Int? /* = 0 */\n
 get() = definedExternally\n set(value) = definedExternally\n var button: Short?

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/* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n var buttons: Short? /* = 0 */\n
get() = definedExternally\n set(value) = definedExternally\n var relatedTarget: EventTarget? /* = null */\n
get() = definedExternally\n set(value) = definedExternally\n var region: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MouseEventInit(screenX: Int? = 0,
screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget:
EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean?
= false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false,
modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper:
Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper:
Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? =
null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
MouseEventInit {\n val o = js(\"({})\")\n o[\"screenX\"] = screenX\n o[\"screenY\"] = screenY\n
o[\"clientX\"] = clientX\n o[\"clientY\"] = clientY\n o[\"button\"] = button\n o[\"buttons\"] = buttons\n
o[\"relatedTarget\"] = relatedTarget\n o[\"region\"] = region\n o[\"ctrlKey\"] = ctrlKey\n o[\"shiftKey\"] =
shiftKey\n o[\"altKey\"] = altKey\n o[\"metaKey\"] = metaKey\n o[\"modifierAltGraph\"] =
modifierAltGraph\n o[\"modifierCapsLock\"] = modifierCapsLock\n o[\"modifierFn\"] = modifierFn\n
o[\"modifierFnLock\"] = modifierFnLock\n o[\"modifierHyper\"] = modifierHyper\n o[\"modifierNumLock\"] =
modifierNumLock\n
 o[\"modifierScrollLock\"] = modifierScrollLock\n o[\"modifierSuper\"] = modifierSuper\n
o[\"modifierSymbol\"] = modifierSymbol\n o[\"modifierSymbolLock\"] = modifierSymbolLock\n o[\"view\"] =
view\n o[\"detail\"] = detail\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] =
composed\n return o\n}\n\npublic external interface EventModifierInit : UIEventInit {\n var ctrlKey: Boolean?
/* = false */\n get() = definedExternally\n set(value) = definedExternally\n var shiftKey: Boolean? /* =
false */\n get() = definedExternally\n set(value) = definedExternally\n var altKey: Boolean? /* = false
/\n get() = definedExternally\n set(value) = definedExternally\n var metaKey: Boolean? / = false */\n
get() = definedExternally\n set(value) = definedExternally\n var modifierAltGraph: Boolean? /* = false */\n
get() = definedExternally\n set(value) = definedExternally\n
 var modifierCapsLock: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierFn: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierFnLock: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierHyper: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var modifierNumLock: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var modifierScrollLock: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var modifierSuper: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var modifierSymbol: Boolean? /* = false */\n get() = definedExternally\n
set(value) = definedExternally\n var
 modifierSymbolLock: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun EventModifierInit(ctrlKey: Boolean? =
false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph:
Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? =
false, modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): EventModifierInit {\n val o = js(\"({})\")\n o[\"ctrlKey\"] = ctrlKey\n o[\"shiftKey\"] = shiftKey\n
o[\"altKey\"] = altKey\n o[\"metaKey\"] = metaKey\n o[\"modifierAltGraph\"]

```



```

= modifierAltGraph\n o["modifierCapsLock"] = modifierCapsLock\n o["modifierFn"] = modifierFn\n
o["modifierFnLock"] = modifierFnLock\n o["modifierHyper"] = modifierHyper\n o["modifierNumLock"] =
modifierNumLock\n o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] = modifierSymbolLock\n o["view"] =
view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n/n/**\n * Exposes the JavaScript

```

```

[WheelEvent](https://developer.mozilla.org/en/docs/Web/API/WheelEvent) to Kotlin\n */\npublic external open
class WheelEvent(type: String, eventInitDict: WheelEventInit = definedExternally): MouseEvent {\n open val
deltaX: Double\n open val deltaY: Double\n open val deltaZ: Double\n open val deltaMode: Int\n\n companion object {\n

```

```

 val DOM_DELTA_PIXEL: Int\n val DOM_DELTA_LINE: Int\n val DOM_DELTA_PAGE: Int\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface WheelEventInit : MouseEventInit {\n var
deltaX: Double? /* = 0.0 */\n get() = definedExternally\n set(value) = definedExternally\n var deltaY:
Double? /* = 0.0 */\n get() = definedExternally\n set(value) = definedExternally\n var deltaZ: Double? /*
= 0.0 */\n get() = definedExternally\n set(value) = definedExternally\n var deltaMode: Int? /* = 0 */\n
get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun WheelEventInit(deltaX: Double? = 0.0,
deltaY: Double? = 0.0, deltaZ: Double? = 0.0, deltaMode: Int? = 0, screenX: Int? = 0, screenY: Int? = 0, clientX:
Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget: EventTarget? = null, region:
String? = null, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey: Boolean? = false, metaKey: Boolean?
= false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false,
modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false,
modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false,
modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): WheelEventInit {\n val o = js("{}")\n
o["deltaX"] = deltaX\n o["deltaY"] = deltaY\n o["deltaZ"] = deltaZ\n o["deltaMode"] = deltaMode\n
o["screenX"] = screenX\n o["screenY"] = screenY\n o["clientX"] = clientX\n o["clientY"] = clientY\n
o["button"] = button\n o["buttons"] = buttons\n o["relatedTarget"] = relatedTarget\n o["region"] =
region\n o["ctrlKey"] = ctrlKey\n o["shiftKey"] = shiftKey\n o["altKey"] = altKey\n o["metaKey"] =
metaKey\n o["modifierAltGraph"] = modifierAltGraph\n o["modifierCapsLock"] = modifierCapsLock\n
o["modifierFn"] = modifierFn\n o["modifierFnLock"] = modifierFnLock\n o["modifierHyper"] =
modifierHyper\n o["modifierNumLock"] = modifierNumLock\n o["modifierScrollLock"] =
modifierScrollLock\n o["modifierSuper"] = modifierSuper\n o["modifierSymbol"] = modifierSymbol\n
o["modifierSymbolLock"] = modifierSymbolLock\n o["view"] = view\n o["detail"] = detail\n
o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return
o\n}\n/n/**\n * Exposes the JavaScript [InputEvent](https://developer.mozilla.org/en/docs/Web/API/InputEvent) to
Kotlin\n */\npublic external

```

```

open class InputEvent(type: String, eventInitDict: InputEventInit = definedExternally): UIEvent {\n open val
data: String\n open val isComposing: Boolean\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface InputEventInit : UIEventInit {\n var data: String? /* = "" */\n get() =
definedExternally\n set(value) = definedExternally\n var isComposing: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun InputEventInit(data: String? = "",
isComposing: Boolean? = false, view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable:
Boolean? = false, composed: Boolean? = false): InputEventInit {\n val o = js("{}")\n o["data"] = data\n
o["isComposing"]

```

```

= isComposing\n o["view"] = view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] =
cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[KeyboardEvent](https://developer.mozilla.org/en/docs/Web/API/KeyboardEvent) to Kotlin\n */\npublic external
open class KeyboardEvent(type: String, eventInitDict: KeyboardEventInit = definedExternally) : UIEvent {\n
open val key: String\n open val code: String\n open val location: Int\n open val ctrlKey: Boolean\n open val
shiftKey: Boolean\n open val altKey: Boolean\n open val metaKey: Boolean\n open val repeat: Boolean\n
open val isComposing: Boolean\n open val charCode: Int\n open val keyCode: Int\n open val which: Int\n
fun getModifierState(keyArg: String): Boolean\n\n companion object {\n val
DOM_KEY_LOCATION_STANDARD: Int\n val DOM_KEY_LOCATION_LEFT: Int\n val
DOM_KEY_LOCATION_RIGHT: Int\n
 val DOM_KEY_LOCATION_NUMPAD: Int\n val NONE: Short\n val CAPTURING_PHASE: Short\n
 val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
KeyboardEventInit : EventModifierInit {\n var key: String? /* = "" */\n get() = definedExternally\n
set(value) = definedExternally\n var code: String? /* = "" */\n get() = definedExternally\n set(value) =
definedExternally\n var location: Int? /* = 0 */\n get() = definedExternally\n set(value) =
definedExternally\n var repeat: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var isComposing: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun KeyboardEventInit(key: String? = "",
code: String? = "", location: Int? = 0, repeat:
Boolean? = false, isComposing: Boolean? = false, ctrlKey: Boolean? = false, shiftKey: Boolean? = false, altKey:
Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false, modifierCapsLock: Boolean? =
false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): KeyboardEventInit {\n val
o = js("{}")\n o["key"] = key\n o["code"] = code\n o["location"] = location\n o["repeat"] = repeat\n
o["isComposing"] = isComposing\n o["ctrlKey"] = ctrlKey\n o["shiftKey"] = shiftKey\n o["altKey"] =
altKey\n o["metaKey"] = metaKey\n o["modifierAltGraph"] = modifierAltGraph\n
o["modifierCapsLock"]
= modifierCapsLock\n o["modifierFn"] = modifierFn\n o["modifierFnLock"] = modifierFnLock\n
o["modifierHyper"] = modifierHyper\n o["modifierNumLock"] = modifierNumLock\n
o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] = modifierSymbolLock\n o["view"] =
view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[CompositionEvent](https://developer.mozilla.org/en/docs/Web/API/CompositionEvent) to Kotlin\n */\npublic
external open class CompositionEvent(type: String, eventInitDict: CompositionEventInit = definedExternally) :
UIEvent {\n open val data: String\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
 }\n}\n\npublic external interface CompositionEventInit : UIEventInit {\n var data: String? /* = "" */\n
get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun CompositionEventInit(data: String? =
"", view: Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): CompositionEventInit {\n val o = js("{}")\n o["data"] = data\n o["view"] = view\n
o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[Event](https://developer.mozilla.org/en/docs/Web/API/Event) to Kotlin\n */\npublic external open class

```

```

Event(type: String, eventInitDict: EventInit = definedExternally) {\n open val type: String\n open val target:
EventTarget?\n open val currentTarget:
 EventTarget?\n open val eventPhase: Short\n open val bubbles: Boolean\n open val cancelable: Boolean\n
open val defaultPrevented: Boolean\n open val composed: Boolean\n open val isTrusted: Boolean\n open val
timeStamp: Number\n fun composedPath(): Array<EventTarget>\n fun stopPropagation()\n fun
stopImmediatePropagation()\n fun preventDefault()\n fun initEvent(type: String, bubbles: Boolean, cancelable:
Boolean)\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val
AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[EventTarget](https://developer.mozilla.org/en/docs/Web/API/EventTarget) to Kotlin\n */\npublic external abstract
class EventTarget {\n fun addEventListener(type: String, callback: EventListener?, options: dynamic =
definedExternally)\n fun addEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic =
definedExternally)\n
 fun removeEventListener(type: String, callback: EventListener?, options: dynamic = definedExternally)\n fun
removeEventListener(type: String, callback: ((Event) -> Unit)?, options: dynamic = definedExternally)\n fun
dispatchEvent(event: Event): Boolean\n}\n\n/**\n * Exposes the JavaScript
[EventListener](https://developer.mozilla.org/en/docs/Web/API/EventListener) to Kotlin\n */\npublic external
interface EventListener {\n fun handleEvent(event: Event)\n}\n\n/* Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.clipboard.*\nimport org.w3c.dom.css.*\nimport
org.w3c.dom.encryptedmedia.*\nimport org.w3c.dom.events.*\nimport org.w3c.dom.mediacapture.*\nimport
org.w3c.dom.mediasource.*\nimport org.w3c.dom.pointerevents.*\nimport org.w3c.dom.svg.*\nimport
org.w3c.fetch.*\nimport org.w3c.files.*\nimport org.w3c.performance.*\nimport org.w3c.workers.*\nimport
org.w3c.xhr.*\n\npublic external abstract class HTMLAllCollection {\n open val length: Int\n fun
item(nameOrIndex: String = definedExternally): UnionElementOrHTMLCollection?\n fun namedItem(name:
String): UnionElementOrHTMLCollection?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLAllCollection.get(index: Int): Element? =
asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLAllCollection.get(name: String): UnionElementOrHTMLCollection? = asDynamic()[name]\n\n/**\n *
Exposes the JavaScript
[HTMLFormControlsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLFormControlsCollection)
to
Kotlin\n */\npublic external abstract class HTMLFormControlsCollection : HTMLCollection\n\n/**\n * Exposes
the JavaScript [RadioNodeList](https://developer.mozilla.org/en/docs/Web/API/RadioNodeList) to Kotlin\n */\n
public external abstract class RadioNodeList : NodeList, UnionElementOrRadioNodeList {\n open var value:
String\n}\n\n/**\n * Exposes the JavaScript
[HTMLOptionsCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionsCollection) to Kotlin\n */\n
public external abstract class HTMLOptionsCollection : HTMLCollection {\n override var length: Int\n open
var selectedIndex: Int\n fun add(element: UnionHTMLOptGroupElementOrHTMLOptionElement, before:
dynamic = definedExternally)\n fun remove(index: Int)\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLOptionsCollection.set(index: Int, option: HTMLOptionElement?) { asDynamic()[index] = option }\n\n/**\n *
Exposes the JavaScript [HTMLInputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLInputElement)
to Kotlin\n */\npublic external abstract class HTMLInputElement : Element, GlobalEventHandlers,
DocumentAndElementEventHandlers, ElementContentEditable, ElementCSSInlineStyle {\n open var title:

```

```

String\n open var lang: String\n open var translate: Boolean\n open var dir: String\n open val dataset:
DOMStringMap\n open var hidden: Boolean\n open var tabIndex: Int\n open var accessKey: String\n open
val accessKeyLabel: String\n open var draggable: Boolean\n open val dropzone: DOMTokenList\n open var
contextMenu: HTMLMenuElement?\n open var spellcheck: Boolean\n open var innerText: String\n open val
offsetParent: Element?\n open val offsetTop: Int\n open val offsetLeft: Int\n open val offsetWidth: Int\n open
val offsetHeight: Int\n fun click()\n fun focus()\n fun blur()\n fun forceSpellCheck()\n\n companion object
{\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLUnknownElement](https://developer.mozilla.org/en/docs/Web/API/HTMLUnknownElement) to Kotlin\n
*\n\npublic external abstract class HTMLUnknownElement : HTMLElement {\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[DOMStringMap](https://developer.mozilla.org/en/docs/Web/API/DOMStringMap) to Kotlin\n
*\n\npublic external
abstract class DOMStringMap\n\n@Suppress(\n"INVISIBLE_REFERENCE",
\n"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.get(name:
String): String? = asDynamic()[name]\n\n\n@Suppress(\n"INVISIBLE_REFERENCE",
\n"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun DOMStringMap.set(name:
String, value: String) { asDynamic()[name] = value }\n\n}\n\n/**\n * Exposes the JavaScript
[HTMLHtmlElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHtmlElement) to Kotlin\n
*\n\npublic
external abstract class HTMLHtmlElement : HTMLElement {\n open var version: String\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val
DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [HTMLHeadElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadElement) to
Kotlin\n
*\n\npublic external abstract class HTMLHeadElement : HTMLElement {\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val

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CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the
JavaScript [HTMLTitleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTitleElement) to Kotlin\n
*\npublic external abstract class HTMLTitleElement : HTMLElement {\n open var text: String\n\n companion
object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE:
Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the
JavaScript [HTMLBaseElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBaseElement) to Kotlin\n
*\npublic external abstract class HTMLBaseElement : HTMLElement {\n open var href: String\n open var
target: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED:
Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val
DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLLinkElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLinkElement) to Kotlin\n
*\npublic external abstract class HTMLLinkElement : HTMLElement, LinkStyle {\n open var href: String\n open var
crossOrigin: String?\n open var rel: String\n open var `as`: RequestDestination\n open val relList:
DOMTokenList\n open var media: String\n open var nonce: String\n open var hreflang: String\n open var
type: String\n open val sizes: DOMTokenList\n open var referrerPolicy: String\n open var charset: String\n
open var rev: String\n open var target: String\n open var scope: String\n open var workerType:
WorkerType\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript

```

```

[HTMLMetaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMetaElement) to Kotlin\n *\npublic
external abstract class HTMLMetaElement : HTMLInputElement {\n open var name: String\n open var httpEquiv:
String\n open var content: String\n open var scheme: String\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLStyleElement](https://developer.mozilla.org/en/docs/Web/API/HTMLStyleElement) to Kotlin\n *\npublic
external abstract class HTMLStyleElement : HTMLInputElement, LinkStyle {\n open var media: String\n open var
nonce: String\n open var type: String\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLBodyElement](https://developer.mozilla.org/en/docs/Web/API/HTMLBodyElement)
to Kotlin\n *\npublic external abstract class HTMLBodyElement : HTMLInputElement, WindowEventHandlers {\n
open var text: String\n open var link: String\n open var vLink: String\n open var aLink: String\n open var
bgColor: String\n open var background: String\n\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [HTMLHeadingElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHeadingElement) to
Kotlin\n *\npublic external abstract class HTMLHeadingElement : HTMLInputElement {\n open var align: String\n
companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript

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[HTMLParagraphElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParagraphElement) to Kotlin
*/\npublic external abstract class HTMLParagraphElement : HTMLDivElement {\n open var align: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLHRElement](https://developer.mozilla.org/en/docs/Web/API/HTMLHRElement) to Kotlin
*/\npublic external abstract class HTMLHRElement : HTMLDivElement {\n open var align: String\n open var color: String\n open var noShade: Boolean\n open var size: String\n open var width: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLPreElement](https://developer.mozilla.org/en/docs/Web/API/HTMLPreElement) to Kotlin
*/\npublic external abstract class HTMLPreElement : HTMLDivElement {\n open var width: Int\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLQuoteElement](https://developer.mozilla.org/en/docs/Web/API/HTMLQuoteElement) to Kotlin
*/\npublic external abstract class HTMLQuoteElement : HTMLDivElement {\n open var cite: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript

```





```

object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

/** Exposes the JavaScript [HTMLAnchorElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAnchorElement) to Kotlin */
public external abstract class HTMLAnchorElement : HTMLElement, HTMLHyperlinkElementUtils {
 open var target: String
 open var download: String
 open var ping: String
 open var rel: String
 open val relList: DOMTokenList
 open var hreflang: String
 open var type: String
 open var text: String
 open var referrerPolicy: String
 open var coords: String
 open var charset: String
 open var name: String
 open var rev: String
 open var shape: String
}

companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

/** Exposes the JavaScript [HTMLDataElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDataElement) to Kotlin */
public external abstract class HTMLDataElement : HTMLElement {
 open var value: String
}

companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

/** Exposes the JavaScript [HTMLTimeElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTimeElement) to Kotlin */
public external abstract class HTMLTimeElement : HTMLElement {
 open var dateTime: String
}

companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

/** Exposes the JavaScript [HTMLSpanElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSpanElement) to Kotlin */
public external abstract class HTMLSpanElement : HTMLElement {
}

companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
}

```



the JavaScript [HTMLSourceElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSourceElement) to Kotlin

```

*\npublic external abstract class HTMLSourceElement : HTMLElement {
 open var src: String
 open var type: String
 open var srcset: String
 open var sizes: String
 open var media: String
 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 }
}

```

\* Exposes the JavaScript [HTMLImageElement](https://developer.mozilla.org/en/docs/Web/API/HTMLImageElement) to Kotlin

```

*\npublic external abstract class HTMLImageElement : HTMLImageElement, HTMLImageElement,
 TexImageSource {
 open var alt: String
 open var src: String
 open var srcset: String
 open var sizes: String
 open var crossOrigin: String?
 open var useMap: String
 open var isMap: Boolean
 open var width: Int
 open var height: Int
 open val naturalWidth: Int
 open val naturalHeight: Int
 open val complete: Boolean
 open val currentSrc: String
 open var referrerPolicy: String
 open var name: String
 open var lowsrc: String
 open var align: String
 open var hspace: Int
 open var vspace: Int
 open var longDesc: String
 open var border: String
 open val x: Int
 open val y: Int
 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
 }
}

```

\* Exposes the JavaScript [HTMLIFrameElement](https://developer.mozilla.org/en/docs/Web/API/HTMLIFrameElement) to Kotlin

```

*\npublic external abstract class HTMLIFrameElement : HTMLIFrameElement {
 open var src: String
 open var srcdoc: String
 open var name: String
 open val sandbox: DOMTokenList
 open var allowFullscreen: Boolean
 open var allowUserMedia: Boolean
 open var width: String
 open var height: String
 open var referrerPolicy: String
 open val contentDocument: Document?
 open val contentWindow: Window?
 open var align: String
 open var scrolling: String
 open var frameBorder: String
 open var longDesc: String
 open var marginHeight: String
 open var marginWidth: String
 fun getSVGDocument(): Document?
 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
 }
}

```

\* Exposes the JavaScript

```

[HTMLEmbedElement](https://developer.mozilla.org/en/docs/Web/API/HTMLEmbedElement) to Kotlin
*/\npublic external abstract class HTMLEmbedElement : HTMLInputElement {\n open var src: String\n open var type: String\n open var width: String\n open var height: String\n open var align: String\n open var name: String\n fun getSVGDocument(): Document?\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLObjectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLObjectElement) to Kotlin
*/\npublic external abstract class HTMLObjectElement : HTMLInputElement {\n open var data: String\n open var type: String\n open var typeMustMatch: Boolean\n open var name: String\n open var useMap: String\n open val form: HTMLFormElement?\n open var width: String\n open var height: String\n open val contentDocument: Document?\n open val contentWindow: Window?\n open val willValidate: Boolean\n open val validity: ValidityState\n open val validationMessage: String\n open var align: String\n open var archive: String\n open var code: String\n open var declare: Boolean\n open var hspace: Int\n open var standby: String\n open var vspace: Int\n open var codeBase: String\n open var codeType: String\n open var border: String\n fun getSVGDocument(): Document?\n fun checkValidity(): Boolean\n fun reportValidity(): Boolean\n fun setCustomValidity(error: String)\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLParamElement](https://developer.mozilla.org/en/docs/Web/API/HTMLParamElement) to Kotlin
*/\npublic external abstract class HTMLParamElement : HTMLInputElement {\n open var name: String\n open var value: String\n open var type: String\n open var valueType: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLVideoElement](https://developer.mozilla.org/en/docs/Web/API/HTMLVideoElement) to Kotlin
*/\npublic external abstract class HTMLVideoElement : HTMLMediaElement, CanvasImageSource, TexImageSource {\n open var width: Int\n open var height: Int\n open val videoWidth: Int\n open val

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videoHeight: Int\n open var poster: String\n open var playsInline: Boolean\n\n companion object {\n val
NETWORK_EMPTY: Short\n val NETWORK_IDLE: Short\n val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n val HAVE_NOTHING: Short\n val HAVE_METADATA:
Short\n val HAVE_CURRENT_DATA: Short\n val HAVE_FUTURE_DATA: Short\n val
HAVE_ENOUGH_DATA: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE:
Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLAudioElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAudioElement) to Kotlin\n
*\npublic external abstract class HTMLAudioElement : HTMLMediaElement {\n companion object {\n val
NETWORK_EMPTY: Short\n val NETWORK_IDLE: Short\n val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n val HAVE_NOTHING: Short\n val HAVE_METADATA:
Short\n val HAVE_CURRENT_DATA: Short\n val HAVE_FUTURE_DATA: Short\n val
HAVE_ENOUGH_DATA: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTrackElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTrackElement) to Kotlin\n
*\npublic external abstract class HTMLTrackElement : HTMLMediaElement {\n open var kind: String\n open var src: String\n
open var srclang: String\n open var
label: String\n open var default: Boolean\n open val readyState: Short\n open val track: TextTrack\n\n
companion object {\n val NONE: Short\n val LOADING: Short\n val LOADED: Short\n val
ERROR: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLMediaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMediaElement) to Kotlin\n
*\npublic external abstract class HTMLMediaElement : HTMLMediaElement {\n open val error: MediaError?\n open
var src: String\n open var srcObject: MediaProvider?\n open val currentSrc: String\n open var crossOrigin:
String?\n open val networkState: Short\n open var preload: String\n open val buffered: TimeRanges\n open
val readyState: Short\n open val seeking: Boolean\n open var currentTime: Double\n open val duration:

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Double\n open val paused: Boolean\n open var defaultPlaybackRate: Double\n open var playbackRate:
Double\n open val played: TimeRanges\n open val seekable: TimeRanges\n open val ended: Boolean\n open
var autoplay: Boolean\n open var loop: Boolean\n open var controls: Boolean\n open var volume: Double\n
open var muted: Boolean\n open var defaultMuted: Boolean\n open val audioTracks:
AudioTrackList\n open val videoTracks: VideoTrackList\n open val textTracks: TextTrackList\n open val
mediaKeys: MediaKeys?\n open var onencrypted: ((Event) -> dynamic)?\n open var onwaitingforkey: ((Event) -
> dynamic)?\n fun load()\n fun canPlayType(type: String): CanPlayTypeResult\n fun fastSeek(time: Double)\n
 fun getStartDate(): dynamic\n fun play(): Promise<Unit>\n fun pause()\n fun addTextTrack(kind:
TextTrackKind, label: String = definedExternally, language: String = definedExternally): TextTrack\n fun
setMediaKeys(mediaKeys: MediaKeys?): Promise<Unit>\n\n companion object {\n val
NETWORK_EMPTY: Short\n val NETWORK_IDLE: Short\n val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n val HAVE_NOTHING: Short\n val HAVE_METADATA:
Short\n val HAVE_CURRENT_DATA: Short\n val HAVE_FUTURE_DATA: Short\n val
HAVE_ENOUGH_DATA: Short\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n /**\n * Exposes the JavaScript
[MediaError](https://developer.mozilla.org/en/docs/Web/API/MediaError) to Kotlin\n */\n public external abstract
class MediaError {\n open val code: Short\n\n companion object {\n val MEDIA_ERR_ABORTED: Short\n
 val MEDIA_ERR_NETWORK:
Short\n val MEDIA_ERR_DECODE: Short\n val MEDIA_ERR_SRC_NOT_SUPPORTED: Short\n
 }\n }\n\n /**\n * Exposes the JavaScript
[AudioTrackList](https://developer.mozilla.org/en/docs/Web/API/AudioTrackList) to Kotlin\n */\n public external
abstract class AudioTrackList : EventTarget {\n open val length: Int\n open var onchange: ((Event) ->
dynamic)?\n open var onaddtrack: ((TrackEvent) -> dynamic)?\n open var onremovetrack: ((TrackEvent) ->
dynamic)?\n fun getTrackById(id: String): AudioTrack?\n }\n\n @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n @kotlin.internal.InlineOnly\n public inline operator fun AudioTrackList.get(index:
Int): AudioTrack? = asDynamic()[index]\n\n /**\n * Exposes the JavaScript
[AudioTrack](https://developer.mozilla.org/en/docs/Web/API/AudioTrack) to Kotlin\n */\n public external abstract
class AudioTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n open val id: String\n open val kind:
String\n open val label: String\n
open val language: String\n open var enabled: Boolean\n open val sourceBuffer: SourceBuffer?\n }\n\n /**\n * Exposes the JavaScript
[VideoTrackList](https://developer.mozilla.org/en/docs/Web/API/VideoTrackList) to
Kotlin\n */\n public external abstract class VideoTrackList : EventTarget {\n open val length: Int\n
open val
selectedIndex: Int\n open var onchange: ((Event) -> dynamic)?\n open var onaddtrack: ((TrackEvent) ->
dynamic)?\n open var onremovetrack: ((TrackEvent) -> dynamic)?\n fun getTrackById(id: String):
VideoTrack?\n }\n\n @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n @kotlin.internal.InlineOnly\n public inline operator fun VideoTrackList.get(index:
Int): VideoTrack? = asDynamic()[index]\n\n /**\n * Exposes the JavaScript
[VideoTrack](https://developer.mozilla.org/en/docs/Web/API/VideoTrack) to Kotlin\n */\n public external abstract
class VideoTrack : UnionAudioTrackOrTextTrackOrVideoTrack {\n open val id: String\n open val kind:
String\n

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open val label: String\n open val language: String\n open var selected: Boolean\n open val sourceBuffer:
SourceBuffer?\n}\n\npublic external abstract class TextTrackList : EventTarget {\n open val length: Int\n open
var onchange: ((Event) -> dynamic)?\n open var onaddtrack: ((TrackEvent) -> dynamic)?\n open var
onremovetrack: ((TrackEvent) -> dynamic)?\n fun getTrackById(id: String):
TextTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun TextTrackList.get(index: Int):
TextTrack? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[TextTrack](https://developer.mozilla.org/en/docs/Web/API/TextTrack) to Kotlin\n */\n\npublic external abstract
class TextTrack : EventTarget, UnionAudioTrackOrTextTrackOrVideoTrack {\n open val kind: TextTrackKind\n
open val label: String\n open val language: String\n open val id: String\n open val
inBandMetadataTrackDispatchType: String\n
open var mode: TextTrackMode\n open val cues: TextTrackCueList?\n open val activeCues:
TextTrackCueList?\n open var oncuechange: ((Event) -> dynamic)?\n open val sourceBuffer: SourceBuffer?\n
fun addCue(cue: TextTrackCue)\n fun removeCue(cue: TextTrackCue)\n}\n\npublic external abstract class
TextTrackCueList {\n open val length: Int\n fun getCueById(id: String):
TextTrackCue?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic inline operator fun TextTrackCueList.get(index:
Int): TextTrackCue? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[TextTrackCue](https://developer.mozilla.org/en/docs/Web/API/TextTrackCue) to Kotlin\n */\n\npublic external
abstract class TextTrackCue : EventTarget {\n open val track: TextTrack?\n open var id: String\n open var
startTime: Double\n open var endTime: Double\n open var pauseOnExit: Boolean\n open var onenter: ((Event)
-> dynamic)?\n open var onexit: ((Event)
-> dynamic)?\n}\n\n/**\n * Exposes the JavaScript
[TimeRanges](https://developer.mozilla.org/en/docs/Web/API/TimeRanges) to Kotlin\n */\n\npublic external abstract
class TimeRanges {\n open val length: Int\n fun start(index: Int): Double\n fun end(index: Int):
Double\n}\n\n/**\n * Exposes the JavaScript
[TrackEvent](https://developer.mozilla.org/en/docs/Web/API/TrackEvent) to Kotlin\n */\n\npublic external open class
TrackEvent(type: String, eventInitDict: TrackEventInit = definedExternally) : Event {\n open val track:
UnionAudioTrackOrTextTrackOrVideoTrack?\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface TrackEventInit : EventInit {\n var track:
UnionAudioTrackOrTextTrackOrVideoTrack? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n\n@kotlin.internal.InlineOnly\n\npublic
inline fun TrackEventInit(track: UnionAudioTrackOrTextTrackOrVideoTrack? = null, bubbles: Boolean? = false,
cancelable: Boolean? = false, composed: Boolean? = false): TrackEventInit {\n val o = js("{}")\n o["track"]
= track\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return
o\n}\n\n/**\n * Exposes the JavaScript
[HTMLMapElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMapElement) to Kotlin\n */\n\npublic
external abstract class HTMLMapElement : HTMLElement {\n open var name: String\n open val areas:
HTMLCollection\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n
val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val
NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val
DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n

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val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [HTMLAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLAreaElement) to
Kotlin\n */\npublic external abstract class HTMLAreaElement : HTMLInputElement, HTMLHyperlinkElementUtils {\n
open var alt: String\n open var coords: String\n open var shape: String\n open var target: String\n open var
download: String\n open var ping: String\n open var rel: String\n open val relList: DOMTokenList\n open
var referrerPolicy: String\n open var noHref: Boolean\n\n companion object {\n val ELEMENT_NODE:
Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableElement) to Kotlin\n */\npublic
external abstract class HTMLTableElement : HTMLInputElement {\n open var caption:
HTMLTableCaptionElement?\n open var tHead:
HTMLTableSectionElement?\n open var tFoot: HTMLTableSectionElement?\n open val tBodies:
HTMLCollection\n open val rows: HTMLCollection\n open var align: String\n open var border: String\n
open var frame: String\n open var rules: String\n open var summary: String\n open var width: String\n open
var bgColor: String\n open var cellPadding: String\n open var cellSpacing: String\n fun createCaption():
HTMLTableCaptionElement\n fun deleteCaption()\n fun createTHead(): HTMLTableSectionElement\n fun
deleteTHead()\n fun createTFoot(): HTMLTableSectionElement\n fun deleteTFoot()\n fun createTBody():
HTMLTableSectionElement\n fun insertRow(index: Int = definedExternally): HTMLTableRowElement\n fun
deleteRow(index: Int)\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
 val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableCaptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCaptionElement) to
Kotlin\n */\npublic external abstract class HTMLTableCaptionElement : HTMLInputElement {\n open var align:
String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
 val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
 val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTableColElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableColElement) to Kotlin\n

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*\npublic external abstract class HTMLTableColElement : HTMLElement {\n open var span: Int\n open var align: String\n open var ch: String\n open var chOff: String\n open var vAlign: String\n open var width: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLTableSectionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableSectionElement) to Kotlin\n */\n\n*\npublic external abstract class HTMLTableSectionElement : HTMLElement {\n open val rows: HTMLCollection\n\n open var align: String\n open var ch: String\n open var chOff: String\n open var vAlign: String\n fun insertRow(index: Int = definedExternally): HTMLElement\n fun deleteRow(index: Int)\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLTableRowElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableRowElement) to Kotlin\n */\n\n*\npublic external abstract class HTMLTableRowElement : HTMLElement {\n open val rowIndex: Int\n open val sectionRowIndex: Int\n open val cells: HTMLCollection\n open var align: String\n open var ch: String\n open var chOff: String\n open var vAlign: String\n open var bgColor: String\n fun insertCell(index: Int = definedExternally): HTMLElement\n fun deleteCell(index: Int)\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript [HTMLTableCellElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTableCellElement) to Kotlin\n */\n\n*\npublic external abstract class HTMLTableCellElement : HTMLElement {\n open var colSpan: Int\n open var rowSpan: Int\n open var headers: String\n open val cellIndex: Int\n open var scope: String\n open var abbr: String\n open var align: String\n open var axis: String\n open var height: String\n open var width: String\n open var ch: String\n open var chOff: String\n open var noWrap: Boolean\n open var vAlign: String\n open var bgColor: String\n\n companion object {\n val ELEMENT_NODE:

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Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLFormElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFormElement) to Kotlin\n *\npublic
external abstract class HTMLFormElement : HTMLElement {\n open var acceptCharset: String\n open var
action: String\n
 open var autocomplete: String\n open var enctype: String\n open var encoding: String\n open var method:
String\n open var name: String\n open var noValidate: Boolean\n open var target: String\n open val
elements: HTMLFormControlsCollection\n open val length: Int\n fun submit()\n fun reset()\n fun
checkValidity(): Boolean\n fun reportValidity(): Boolean\n\n companion object {\n val ELEMENT_NODE:
Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE:
Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING:
Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val
DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
 }\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLFormElement.get(index: Int): Element? =
asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
HTMLFormElement.get(name: String): UnionElementOrRadioNodeList? = asDynamic()[name]\n\n/**\n * Exposes
the JavaScript [HTMLLabelElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLabelElement) to
Kotlin\n *\npublic external abstract class HTMLLabelElement : HTMLElement {\n open val form:
HTMLFormElement?\n open var htmlFor: String\n open val control: HTMLElement?\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
 val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLInputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLInputElement) to Kotlin\n *\npublic
external abstract class HTMLInputElement : HTMLElement {\n open var accept: String\n open var alt: String\n
 open var autocomplete: String\n open var autofocus: Boolean\n open var defaultChecked: Boolean\n

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open var checked: Boolean\n open var dirName: String\n open var disabled: Boolean\n open val form:
HTMLFormElement?\n open val files: FileList?\n open var formAction: String\n open var formEnctype:
String\n open var formMethod: String\n open var formNoValidate: Boolean\n open var formTarget: String\n
open var height: Int\n open var indeterminate: Boolean\n open var inputMode: String\n open val list:
HTMLElement?\n open var max: String\n open var maxLength: Int\n open var min: String\n open var
minLength: Int\n open var multiple: Boolean\n open var name: String\n open var pattern: String\n open var
placeholder: String\n open var readOnly: Boolean\n open var required: Boolean\n open var size: Int\n open
var src: String\n open var step: String\n open var type: String\n open var defaultValue: String\n open var
value: String\n open var valueAsDate: dynamic\n open var valueAsNumber: Double\n
open var width: Int\n open val willValidate: Boolean\n open val validity: ValidityState\n open val
validationMessage: String\n open val labels: NodeList\n open var selectionStart: Int?\n open var selectionEnd:
Int?\n open var selectionDirection: String?\n open var align: String\n open var useMap: String\n fun
stepUp(n: Int = definedExternally)\n fun stepDown(n: Int = definedExternally)\n fun checkValidity(): Boolean\n
fun reportValidity(): Boolean\n fun setCustomValidity(error: String)\n fun select()\n fun
setRangeText(replacement: String)\n fun setRangeText(replacement: String, start: Int, end: Int, selectionMode:
SelectionMode = definedExternally)\n fun setSelectionRange(start: Int, end: Int, direction: String =
definedExternally)\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLButtonElement](https://developer.mozilla.org/en/docs/Web/API/HTMLButtonElement) to Kotlin\n
*\npublic external abstract class HTMLButtonElement : HTMLElement {\n open var autofocus: Boolean\n
open var disabled: Boolean\n open val form: HTMLFormElement?\n open var formAction: String\n open var
formEnctype: String\n open var formMethod: String\n open
var formNoValidate: Boolean\n open var formTarget: String\n open var name: String\n open var type:
String\n open var value: String\n open var menu: HTMLMenuElement?\n open val willValidate: Boolean\n
open val validity: ValidityState\n open val validationMessage: String\n open val labels: NodeList\n fun
checkValidity(): Boolean\n fun reportValidity(): Boolean\n fun setCustomValidity(error: String)\n\n
companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS:
Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLSelectElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSelectElement) to Kotlin\n
*\npublic external abstract class HTMLSelectElement : HTMLElement, ItemArrayLike<Element> {\n open var
autocomplete: String\n open var autofocus: Boolean\n open var disabled: Boolean\n open val form:
HTMLFormElement?\n open var multiple: Boolean\n open var name: String\n open var required: Boolean\n
open var size: Int\n open val type: String\n open val options: HTMLOptionsCollection\n override var length:

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[HTMLOptionElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOptionElement) to Kotlin\n
*\npublic external abstract class HTMLOptionElement : HTMLInputElement,\n
UnionHTMLOptGroupElementOrHTMLOptionElement {\n open var disabled: Boolean\n open val form:\n
HTMLFormElement?\n
 open var label: String\n open var defaultSelected: Boolean\n open var selected: Boolean\n open var value:\n
String\n open var text: String\n open val index: Int\n\n companion object {\n val ELEMENT_NODE:\n
Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE:\n
Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val\n
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val\n
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val\n
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val\n
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val\n
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n**\n * Exposes the JavaScript\n
[HTMLTextAreaElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTextAreaElement) to Kotlin\n
*\npublic external abstract class HTMLTextAreaElement : HTMLInputElement {\n open var autocomplete: String\n
open var autofocus: Boolean\n open var cols: Int\n open var dirName: String\n open var disabled: Boolean\n
open val form: HTMLFormElement?\n open var inputMode: String\n open var maxLength: Int\n open var\n
minLength: Int\n open var name: String\n open var placeholder: String\n open var readOnly: Boolean\n open\n
var required: Boolean\n open var rows: Int\n open var wrap: String\n open val type: String\n open var\n
defaultValue: String\n open var value: String\n open val maxLength: Int\n open val willValidate: Boolean\n
open val validity: ValidityState\n open val validationMessage: String\n open val labels: NodeList\n open var\n
selectionStart: Int?\n open var selectionEnd: Int?\n open var selectionDirection:\n
String?\n fun checkValidity(): Boolean\n fun reportValidity(): Boolean\n fun setCustomValidity(error:\n
String)\n fun select()\n fun setRangeText(replacement: String)\n fun setRangeText(replacement: String, start:\n
Int, end: Int, selectionMode: SelectionMode = definedExternally)\n fun setSelectionRange(start: Int, end: Int,\n
direction: String = definedExternally)\n\n companion object {\n val ELEMENT_NODE: Short\n val\n
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val\n
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val\n
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val\n
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val\n
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val\n
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n\n
 val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:\n
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n**\n * Exposes\n
the JavaScript [HTMLKeygenElement](https://developer.mozilla.org/en/docs/Web/API/HTMLKeygenElement) to\n
Kotlin\n*\npublic external abstract class HTMLKeygenElement : HTMLInputElement {\n open var autofocus:\n
Boolean\n open var challenge: String\n open var disabled: Boolean\n open val form: HTMLFormElement?\n
open var keytype: String\n open var name: String\n open val type: String\n open val willValidate: Boolean\n
open val validity: ValidityState\n open val validationMessage: String\n open val labels: NodeList\n fun\n
checkValidity(): Boolean\n fun reportValidity(): Boolean\n fun setCustomValidity(error: String)\n\n
companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val\n
TEXT_NODE: Short\n val CDATA_SECTION_NODE:\n
Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val\n
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val\n
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val\n

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DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val

DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val

DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n/\*\*\n \* Exposes the JavaScript [HTMLOutputElement](https://developer.mozilla.org/en/docs/Web/API/HTMLOutputElement) to Kotlin\n \*\n\npublic external abstract class HTMLOutputElement : HTMLElement {\n open val htmlFor: DOMTokenList\n open val form: HTMLFormElement?\n open var name: String\n open val type: String\n open var defaultValue: String\n open var value: String\n open val willValidate: Boolean\n open val validity: ValidityState\n open val validationMessage: String\n open val labels: NodeList\n fun checkValidity(): Boolean\n fun reportValidity(): Boolean\n fun setCustomValidity(error: String)\n\n companion object {\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n/\*\*\n \* Exposes the JavaScript [HTMLProgressElement](https://developer.mozilla.org/en/docs/Web/API/HTMLProgressElement) to Kotlin\n \*\n\npublic external abstract class HTMLProgressElement : HTMLElement {\n open var value: Double\n open var max: Double\n open val position: Double\n open val labels: NodeList\n\n companion object {\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n/\*\*\n \* Exposes the JavaScript [HTMLMeterElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMeterElement) to Kotlin\n \*\n\npublic external abstract class HTMLMeterElement : HTMLElement {\n open var value: Double\n open var min: Double\n open var max: Double\n open var low: Double\n open var high: Double\n open var optimum: Double\n open val labels: NodeList\n\n companion object {\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n/\*\*\n \* Exposes the JavaScript [HTMLFieldSetElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFieldSetElement) to Kotlin\n \*\n\npublic external abstract class HTMLFieldSetElement : HTMLElement {\n open var disabled:

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Boolean\n open val form: HTMLFormElement?\n open var name: String\n open val type: String\n open val
elements: HTMLCollection\n open val willValidate: Boolean\n open val validity: ValidityState\n open val
validationMessage: String\n fun checkValidity(): Boolean\n fun reportValidity(): Boolean\n fun
setCustomValidity(error: String)\n\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLLegendElement](https://developer.mozilla.org/en/docs/Web/API/HTMLLegendElement) to Kotlin\n
*\n\npublic external abstract class HTMLLegendElement : HTMLElement {\n open val form:
HTMLFormElement?\n open var align: String\n\n companion
object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE:
Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[ValidityState](https://developer.mozilla.org/en/docs/Web/API/ValidityState) to Kotlin\n
*\n\npublic external
abstract class ValidityState {\n open val valueMissing: Boolean\n open val typeMismatch:
Boolean\n open val patternMismatch: Boolean\n open val tooLong: Boolean\n open val tooShort: Boolean\n
open val rangeUnderflow: Boolean\n open val rangeOverflow: Boolean\n open val stepMismatch: Boolean\n
open val badInput: Boolean\n open val customError: Boolean\n open val valid: Boolean\n}\n\n/**\n * Exposes
the JavaScript [HTMLDetailsElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDetailsElement) to
Kotlin\n
*\n\npublic external abstract class HTMLDetailsElement : HTMLElement {\n open var open: Boolean\n
companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n
val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val
DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external
abstract class HTMLMenuElement : HTMLElement {\n open var type: String\n open var label: String\n open
var compact: Boolean\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val

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DOCUMENT_POSITION_DISCONNECTED:
Short val DOCUMENT_POSITION_PRECEDING: Short val
DOCUMENT_POSITION_FOLLOWING: Short val DOCUMENT_POSITION_CONTAINS: Short
val DOCUMENT_POSITION_CONTAINED_BY: Short val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short } } \n \n public external abstract class
HTMLMenuItemElement : HTMLElement { \n open var type: String \n open var label: String \n open var icon:
String \n open var disabled: Boolean \n open var checked: Boolean \n open var radiogroup: String \n open var
default: Boolean \n \n companion object { \n val ELEMENT_NODE: Short val ATTRIBUTE_NODE:
Short val TEXT_NODE: Short val CDATA_SECTION_NODE: Short val
ENTITY_REFERENCE_NODE: Short val ENTITY_NODE: Short val
PROCESSING_INSTRUCTION_NODE: Short val COMMENT_NODE: Short val
DOCUMENT_NODE: Short val DOCUMENT_TYPE_NODE: Short val
DOCUMENT_FRAGMENT_NODE: Short
val NOTATION_NODE: Short val DOCUMENT_POSITION_DISCONNECTED: Short val
DOCUMENT_POSITION_PRECEDING: Short val DOCUMENT_POSITION_FOLLOWING: Short \n
val DOCUMENT_POSITION_CONTAINS: Short val DOCUMENT_POSITION_CONTAINED_BY:
Short val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short } } \n \n public external
open class RelatedEvent(type: String, eventInitDict: RelatedEventInit = definedExternally) : Event { \n open val
relatedTarget: EventTarget? \n \n companion object { \n val NONE: Short val CAPTURING_PHASE:
Short val AT_TARGET: Short val BUBBLING_PHASE: Short } } \n \n public external interface
RelatedEventInit : EventInit { \n var relatedTarget: EventTarget? /* = null */ \n get() = definedExternally \n
set(value) = definedExternally } \n \n @Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER") \n @kotlin.internal.InlineOnly \n public inline fun RelatedEventInit(relatedTarget:
EventTarget?
= null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): RelatedEventInit { \n
val o = js("{}") \n o["relatedTarget"] = relatedTarget \n o["bubbles"] = bubbles \n o["cancelable"] =
cancelable \n o["composed"] = composed \n return o } \n \n /** \n * Exposes the JavaScript
[HTMLDialogElement](https://developer.mozilla.org/en/docs/Web/API/HTMLDialogElement) to Kotlin \n
*/ \n public external abstract class HTMLDialogElement : HTMLElement { \n open var open: Boolean \n open var
returnValue: String \n fun show(anchor: UnionElementOrMouseEvent = definedExternally) \n fun
showModal(anchor: UnionElementOrMouseEvent = definedExternally) \n fun close(returnValue: String =
definedExternally) \n \n companion object { \n val ELEMENT_NODE: Short val ATTRIBUTE_NODE:
Short val TEXT_NODE: Short val CDATA_SECTION_NODE: Short val
ENTITY_REFERENCE_NODE: Short val ENTITY_NODE: Short
val PROCESSING_INSTRUCTION_NODE: Short val COMMENT_NODE: Short val
DOCUMENT_NODE: Short val DOCUMENT_TYPE_NODE: Short val
DOCUMENT_FRAGMENT_NODE: Short val NOTATION_NODE: Short val
DOCUMENT_POSITION_DISCONNECTED: Short val DOCUMENT_POSITION_PRECEDING: Short \n
val DOCUMENT_POSITION_FOLLOWING: Short val DOCUMENT_POSITION_CONTAINS: Short \n
val DOCUMENT_POSITION_CONTAINED_BY: Short val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short } } \n \n /** \n * Exposes the JavaScript
[HTMLScriptElement](https://developer.mozilla.org/en/docs/Web/API/HTMLScriptElement) to Kotlin \n
*/ \n public external abstract class HTMLScriptElement : HTMLElement, HTMLOrSVGScriptElement { \n open var src:
String \n open var type: String \n open var charset: String \n open var async: Boolean \n open var defer:
Boolean \n open var crossOrigin: String? \n open var text: String \n open var nonce:
String \n open var event: String \n open var htmlFor: String \n \n companion object { \n val
ELEMENT_NODE: Short val ATTRIBUTE_NODE: Short val TEXT_NODE: Short val
CDATA_SECTION_NODE: Short val ENTITY_REFERENCE_NODE: Short val ENTITY_NODE:

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Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLTemplateElement](https://developer.mozilla.org/en/docs/Web/API/HTMLTemplateElement) to Kotlin\n
*/\npublic external
abstract class HTMLTemplateElement : HTMLElement {\n open val content: DocumentFragment\n\n
companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
 val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLSlotElement](https://developer.mozilla.org/en/docs/Web/API/HTMLSlotElement) to Kotlin\n
*/\npublic external abstract class HTMLSlotElement : HTMLElement {\n open var name: String\n fun
assignedNodes(options: AssignedNodesOptions = definedExternally): Array<Node>\n\n companion object {\n
val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external interface
AssignedNodesOptions {\n var flatten: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun AssignedNodesOptions(flatten:
Boolean? = false): AssignedNodesOptions {\n val o = js(\"({})\")\n o[\"flatten\"] = flatten\n return
o\n}\n\n/**\n * Exposes the JavaScript
[HTMLCanvasElement](https://developer.mozilla.org/en/docs/Web/API/HTMLCanvasElement) to Kotlin\n
*/\npublic external abstract class HTMLCanvasElement : HTMLElement, CanvasImageSource, TexImageSource
{\n open var width: Int\n open var height: Int\n fun getContext(contextId: String, vararg arguments: Any?):
RenderingContext?\n fun toDataURL(type: String = definedExternally, quality: Any? = definedExternally):
String\n fun toBlob(_callback: (Blob?) -> Unit, type: String = definedExternally, quality: Any? =
definedExternally)\n\n companion object {\n
val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n

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 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n } \n} \n\npublic external interface
CanvasRenderingContext2DSettings {\n var alpha: Boolean? /* = true */ \n get() = definedExternally\n
set(value) = definedExternally\n} \n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER") \n\n@kotlin.internal.InlineOnly \n\npublic
inline fun CanvasRenderingContext2DSettings(alpha: Boolean? = true): CanvasRenderingContext2DSettings {\n
 val o = js("{}") \n o["alpha"] = alpha \n return o \n} \n\n/** \n * Exposes the JavaScript
[CanvasRenderingContext2D](https://developer.mozilla.org/en/docs/Web/API/CanvasRenderingContext2D) to
Kotlin \n * \n\npublic external abstract class CanvasRenderingContext2D : CanvasState, CanvasTransform,
CanvasCompositing, CanvasImageSmoothing, CanvasFillStrokeStyles, CanvasShadowStyles, CanvasFilters,
CanvasRect, CanvasDrawPath, CanvasUserInterface, CanvasText, CanvasDrawImage, CanvasHitRegion,
CanvasImageData, CanvasPathDrawingStyles, CanvasTextDrawingStyles, CanvasPath, RenderingContext {\n
 open val canvas: HTMLCanvasElement \n} \n\npublic external interface CanvasState {\n fun save() \n
 fun restore() \n} \n\npublic external interface CanvasTransform {\n fun scale(x: Double, y: Double) \n
 fun rotate(angle: Double) \n fun translate(x:
 Double, y: Double) \n fun transform(a: Double, b: Double, c: Double, d: Double, e: Double, f: Double) \n
 fun getTransform(): DOMMatrix \n fun setTransform(a: Double, b: Double, c: Double, d: Double, e: Double, f:
 Double) \n fun setTransform(transform: dynamic = definedExternally) \n fun resetTransform() \n} \n\npublic
external interface CanvasCompositing {\n var globalAlpha: Double \n var globalCompositeOperation:
 String \n} \n\npublic external interface CanvasImageSmoothing {\n var imageSmoothingEnabled: Boolean \n
 var imageSmoothingQuality: ImageSmoothingQuality \n} \n\npublic external interface CanvasFillStrokeStyles {\n
 var strokeStyle: dynamic \n get() = definedExternally \n set(value) = definedExternally \n var fillStyle:
 dynamic \n get() = definedExternally \n set(value) = definedExternally \n fun createLinearGradient(x0:
 Double, y0: Double, x1: Double, y1: Double): CanvasGradient \n fun createRadialGradient(x0: Double, y0:
 Double,
 r0: Double, x1: Double, y1: Double, r1: Double): CanvasGradient \n fun createPattern(image:
 CanvasImageSource, repetition: String): CanvasPattern? \n} \n\npublic external interface CanvasShadowStyles {\n
 var shadowOffsetX: Double \n var shadowOffsetY: Double \n var shadowBlur: Double \n var shadowColor:
 String \n} \n\npublic external interface CanvasFilters {\n var filter: String \n} \n\npublic external interface
CanvasRect {\n fun clearRect(x: Double, y: Double, w: Double, h: Double) \n fun fillRect(x: Double, y: Double,
 w: Double, h: Double) \n fun strokeRect(x: Double, y: Double, w: Double, h: Double) \n} \n\npublic external
interface CanvasDrawPath {\n fun beginPath() \n fun fill(fillRule: CanvasFillRule = definedExternally) \n
 fun fill(path: Path2D, fillRule: CanvasFillRule = definedExternally) \n fun stroke() \n fun stroke(path: Path2D) \n
 fun clip(fillRule: CanvasFillRule = definedExternally) \n fun clip(path: Path2D, fillRule: CanvasFillRule =
 definedExternally) \n
 fun resetClip() \n fun isPointInPath(x: Double, y: Double, fillRule: CanvasFillRule = definedExternally):
 Boolean \n fun isPointInPath(path: Path2D, x: Double, y: Double, fillRule: CanvasFillRule = definedExternally):
 Boolean \n fun isPointInStroke(x: Double, y: Double): Boolean \n fun isPointInStroke(path: Path2D, x: Double,
 y: Double): Boolean \n} \n\npublic external interface CanvasUserInterface {\n fun drawFocusIfNeeded(element:
 Element) \n fun drawFocusIfNeeded(path: Path2D, element: Element) \n fun scrollPathIntoView() \n fun
 scrollPathIntoView(path: Path2D) \n} \n\npublic external interface CanvasText {\n fun fillText(text: String, x:
 Double, y: Double, maxWidth: Double = definedExternally) \n fun strokeText(text: String, x: Double, y: Double,
 maxWidth: Double = definedExternally) \n fun measureText(text: String): TextMetrics \n} \n\npublic external
interface CanvasDrawImage {\n fun drawImage(image: CanvasImageSource, dx: Double, dy: Double) \n
 fun drawImage(image: CanvasImageSource, dx: Double, dy: Double, dw: Double, dh: Double) \n fun
 drawImage(image: CanvasImageSource, sx: Double, sy: Double, sw: Double, sh: Double, dx: Double, dy: Double,
 dw: Double, dh: Double) \n} \n\npublic external interface CanvasHitRegion {\n fun addHitRegion(options:

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HitRegionOptions = definedExternally)\n fun removeHitRegion(id: String)\n fun clearHitRegions()\n}\n\npublic
external interface CanvasImageData {\n fun createImageData(sw: Double, sh: Double): ImageData\n fun
createImageData(imagedata: ImageData): ImageData\n fun getImageData(sx: Double, sy: Double, sw: Double, sh:
Double): ImageData\n fun putImageData(imagedata: ImageData, dx: Double, dy: Double)\n fun
putImageData(imagedata: ImageData, dx: Double, dy: Double, dirtyX: Double, dirtyY: Double, dirtyWidth: Double,
dirtyHeight: Double)\n}\n\npublic external interface CanvasPathDrawingStyles {\n var lineWidth: Double\n var
lineCap: CanvasLineCap\n
var lineJoin: CanvasLineJoin\n var miterLimit: Double\n var lineDashOffset: Double\n fun
setLineDash(segments: Array<Double>)\n fun getLineDash(): Array<Double>\n}\n\npublic external interface
CanvasTextDrawingStyles {\n var font: String\n var textAlign: CanvasTextAlign\n var textBaseline:
CanvasTextBaseline\n var direction: CanvasDirection\n}\n\npublic external interface CanvasPath {\n fun
closePath()\n fun moveTo(x: Double, y: Double)\n fun lineTo(x: Double, y: Double)\n fun
quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n fun bezierCurveTo(cp1x: Double, cp1y:
Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n fun arcTo(x1: Double, y1: Double, x2: Double, y2:
Double, radius: Double)\n fun arcTo(x1: Double, y1: Double, x2: Double, y2: Double, radiusX: Double, radiusY:
Double, rotation: Double)\n fun rect(x: Double, y: Double, w: Double, h: Double)\n fun arc(x: Double, y:
Double, radius: Double, startAngle: Double,
endAngle: Double, anticlockwise: Boolean = definedExternally)\n fun ellipse(x: Double, y: Double, radiusX:
Double, radiusY: Double, rotation: Double, startAngle: Double, endAngle: Double, anticlockwise: Boolean =
definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[CanvasGradient](https://developer.mozilla.org/en/docs/Web/API/CanvasGradient) to Kotlin\n */\n\npublic external
abstract class CanvasGradient {\n fun addColorStop(offset: Double, color: String)\n}\n\n/**\n * Exposes the
JavaScript [CanvasPattern](https://developer.mozilla.org/en/docs/Web/API/CanvasPattern) to Kotlin\n */\n\npublic
external abstract class CanvasPattern {\n fun setTransform(transform: dynamic = definedExternally)\n}\n\n/**\n *
Exposes the JavaScript [TextMetrics](https://developer.mozilla.org/en/docs/Web/API/TextMetrics) to Kotlin\n
*/\n\npublic external abstract class TextMetrics {\n open val width: Double\n open val actualBoundingBoxLeft:
Double\n open val actualBoundingBoxRight: Double\n
open val fontBoundingBoxAscent: Double\n open val fontBoundingBoxDescent: Double\n open val
actualBoundingBoxAscent: Double\n open val actualBoundingBoxDescent: Double\n open val
emHeightAscent: Double\n open val emHeightDescent: Double\n open val hangingBaseline: Double\n open
val alphabeticBaseline: Double\n open val ideographicBaseline: Double\n}\n\npublic external interface
HitRegionOptions {\n var path: Path2D? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var fillRule: CanvasFillRule? /* = CanvasFillRule.NONZERO */\n get() =
definedExternally\n set(value) = definedExternally\n var id: String? /* = "" */\n get() =
definedExternally\n set(value) = definedExternally\n var parentID: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var cursor: String? /* = "inherit" */\n get() =
definedExternally\n set(value)
= definedExternally\n var control: Element? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var label: String? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var role: String? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("\INVISIBLE_REFERENCE",
\INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun HitRegionOptions(path: Path2D? =
null, fillRule: CanvasFillRule? = CanvasFillRule.NONZERO, id: String? = "", parentID: String? = null, cursor:
String? = "inherit", control: Element? = null, label: String? = null, role: String? = null): HitRegionOptions {\n
val
o = js("{}")\n o["path"] = path\n o["fillRule"] = fillRule\n o["id"] = id\n o["parentID"] = parentID\n
o["cursor"] = cursor\n o["control"] = control\n o["label"] = label\n o["role"] = role\n return
o\n}\n\n/**\n

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* Exposes the JavaScript [ImageData](https://developer.mozilla.org/en/docs/Web/API/ImageData) to Kotlin
*\npublic external open class ImageData : ImageBitmapSource, TexImageSource {\n constructor(sw: Int, sh:
Int)\n constructor(data: Uint8ClampedArray, sw: Int, sh: Int = definedExternally)\n open val width: Int\n open
val height: Int\n open val data: Uint8ClampedArray\n}\n\n/**\n * Exposes the JavaScript
[Path2D](https://developer.mozilla.org/en/docs/Web/API/Path2D) to Kotlin
*\npublic external open class
Path2D() : CanvasPath {\n constructor(path: Path2D)\n constructor(paths: Array<Path2D>, fillRule:
CanvasFillRule = definedExternally)\n constructor(d: String)\n fun addPath(path: Path2D, transform: dynamic =
definedExternally)\n override fun closePath()\n override fun moveTo(x: Double, y: Double)\n override fun
lineTo(x: Double, y: Double)\n override fun quadraticCurveTo(cpx: Double, cpy: Double, x: Double, y: Double)\n
 override fun bezierCurveTo(cp1x:
Double, cp1y: Double, cp2x: Double, cp2y: Double, x: Double, y: Double)\n override fun arcTo(x1: Double, y1:
Double, x2: Double, y2: Double, radius: Double)\n override fun arcTo(x1: Double, y1: Double, x2: Double, y2:
Double, radiusX: Double, radiusY: Double, rotation: Double)\n override fun rect(x: Double, y: Double, w: Double,
h: Double)\n override fun arc(x: Double, y: Double, radius: Double, startAngle: Double, endAngle: Double,
anticlockwise: Boolean /* = definedExternally */) \n override fun ellipse(x: Double, y: Double, radiusX: Double,
radiusY: Double, rotation: Double, startAngle: Double, endAngle: Double, anticlockwise: Boolean /* =
definedExternally */) \n}\n\n/**\n * Exposes the JavaScript
[ImageBitmapRenderingContext](https://developer.mozilla.org/en/docs/Web/API/ImageBitmapRenderingContext)
to Kotlin
*\npublic external abstract class ImageBitmapRenderingContext {\n open val canvas:
HTMLCanvasElement\n fun transferFromImageBitmap(bitmap:
ImageBitmap?)\n}\n\npublic external interface ImageBitmapRenderingContextSettings {\n var alpha: Boolean? /*
= true */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun
ImageBitmapRenderingContextSettings(alpha: Boolean? = true): ImageBitmapRenderingContextSettings {\n val o
= js(\"({})\")\n o[\"alpha\"] = alpha\n return o\n}\n\n/**\n * Exposes the JavaScript
[CustomElementRegistry](https://developer.mozilla.org/en/docs/Web/API/CustomElementRegistry) to Kotlin
*\npublic external abstract class CustomElementRegistry {\n fun define(name: String, constructor: () -> dynamic,
options: ElementDefinitionOptions = definedExternally)\n fun get(name: String): Any?\n fun
whenDefined(name: String): Promise<Unit>\n}\n\npublic external interface ElementDefinitionOptions {\n var
extends: String?\n get() = definedExternally\n
 set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ElementDefinitionOptions(extends:
String? = undefined): ElementDefinitionOptions {\n val o = js(\"({})\")\n o[\"extends\"] = extends\n return
o\n}\n\npublic external interface ElementContentEditable {\n var contentEditable: String\n val
isContentEditable: Boolean\n}\n\n/**\n * Exposes the JavaScript
[DataTransfer](https://developer.mozilla.org/en/docs/Web/API/DataTransfer) to Kotlin
*\npublic external
abstract class DataTransfer {\n open var dropEffect: String\n open var effectAllowed: String\n open val items:
DataTransferItemList\n open val types: Array<out String>\n open val files: FileList\n fun
setDragImage(image: Element, x: Int, y: Int)\n fun getData(format: String): String\n fun setData(format: String,
data: String)\n fun clearData(format: String = definedExternally)\n}\n\n/**\n * Exposes the
JavaScript [DataTransferItemList](https://developer.mozilla.org/en/docs/Web/API/DataTransferItemList) to
Kotlin
*\npublic external abstract class DataTransferItemList {\n open val length: Int\n fun add(data: String,
type: String): DataTransferItem?\n fun add(data: File): DataTransferItem?\n fun remove(index: Int)\n fun
clear()\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun
DataTransferItemList.get(index: Int): DataTransferItem? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DataTransferItem](https://developer.mozilla.org/en/docs/Web/API/DataTransferItem) to Kotlin
*\npublic

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external abstract class DataTransferItem {\n open val kind: String\n open val type: String\n fun
getAsString(_callback: ((String) -> Unit)?)\n fun getAsFile(): File?\n}\n\n/**\n * Exposes the JavaScript
[DragEvent](https://developer.mozilla.org/en/docs/Web/API/DragEvent) to Kotlin\n */\npublic external
open class DragEvent(type: String, eventInitDict: DragEventInit = definedExternally) : MouseEvent {\n open val
dataTransfer: DataTransfer?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE:
Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
DragEventInit : MouseEventInit {\n var dataTransfer: DataTransfer? /* = null */\n get() = definedExternally\n
 set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun DragEventInit(dataTransfer:
DataTransfer? = null, screenX: Int? = 0, screenY: Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0,
buttons: Short? = 0, relatedTarget: EventTarget? = null, region: String? = null, ctrlKey: Boolean? = false, shiftKey:
Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false,
modifierCapsLock: Boolean?
= false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false, modifierHyper: Boolean? = false,
modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false, modifierSuper: Boolean? = false,
modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view: Window? = null, detail: Int? = 0,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): DragEventInit {\n val o =
js("{}")\n o["dataTransfer"] = dataTransfer\n o["screenX"] = screenX\n o["screenY"] = screenY\n
 o["clientX"] = clientX\n o["clientY"] = clientY\n o["button"] = button\n o["buttons"] = buttons\n
 o["relatedTarget"] = relatedTarget\n o["region"] = region\n o["ctrlKey"] = ctrlKey\n o["shiftKey"] =
shiftKey\n o["altKey"] = altKey\n o["metaKey"] = metaKey\n o["modifierAltGraph"] =
modifierAltGraph\n o["modifierCapsLock"] = modifierCapsLock\n o["modifierFn"] = modifierFn\n
 o["modifierFnLock"] = modifierFnLock\n o["modifierHyper"] = modifierHyper\n o["modifierNumLock"]
= modifierNumLock\n o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] =
modifierSuper\n o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] =
modifierSymbolLock\n o["view"] = view\n o["detail"] = detail\n o["bubbles"] = bubbles\n
 o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[Window](https://developer.mozilla.org/en/docs/Web/API/Window) to Kotlin\n */\npublic external abstract class
Window : EventTarget, GlobalEventHandlers, WindowEventHandlers, WindowOrWorkerGlobalScope,
WindowSessionStorage, WindowLocalStorage, GlobalPerformance, UnionMessagePortOrWindowProxy {\n open
val window: Window\n open val self: Window\n open val document: Document\n open var name: String\n
 open val location: Location\n open val history: History\n open
 val customElements: CustomElementRegistry\n open val locationbar: BarProp\n open val menubar: BarProp\n
 open val personalbar: BarProp\n open val scrollbars: BarProp\n open val statusbar: BarProp\n open val
toolbar: BarProp\n open var status: String\n open val closed: Boolean\n open val frames: Window\n open val
length: Int\n open val top: Window\n open var opener: Any?\n open val parent: Window\n open val
frameElement: Element?\n open val navigator: Navigator\n open val applicationCache: ApplicationCache\n
 open val external: External\n open val screen: Screen\n open val innerWidth: Int\n open val innerHeight: Int\n
 open val scrollX: Double\n open val pageXOffset: Double\n open val scrollY: Double\n open val
pageYOffset: Double\n open val screenX: Int\n open val screenY: Int\n open val outerWidth: Int\n open val
outerHeight: Int\n open val devicePixelRatio: Double\n fun close()\n fun stop()\n
 fun focus()\n fun blur()\n fun open(url: String = definedExternally, target: String = definedExternally,
features: String = definedExternally): Window?\n fun alert()\n fun alert(message: String)\n fun
confirm(message: String = definedExternally): Boolean\n fun prompt(message: String = definedExternally,
default: String = definedExternally): String?\n fun print()\n fun requestAnimationFrame(callback: (Double) ->
Unit): Int\n fun cancelAnimationFrame(handle: Int)\n fun postMessage(message: Any?, targetOrigin: String,
transfer: Array<dynamic> = definedExternally)\n fun captureEvents()\n fun releaseEvents()\n fun
matchMedia(query: String): MediaQueryList\n fun moveTo(x: Int, y: Int)\n fun moveBy(x: Int, y: Int)\n fun

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resizeTo(x: Int, y: Int)\n fun resizeBy(x: Int, y: Int)\n fun scroll(options: ScrollToOptions = definedExternally)\n
fun scroll(x: Double, y: Double)\n fun scrollTo(options: ScrollToOptions = definedExternally)\n
fun scrollTo(x: Double, y: Double)\n fun scrollBy(options: ScrollToOptions = definedExternally)\n fun
scrollBy(x: Double, y: Double)\n fun getComputedStyle(elt: Element, pseudoElt: String? = definedExternally):
CSSStyleDeclaration\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Window.get(name: String):
dynamic = asDynamic()[name]\n\npublic external abstract class BarProp {\n open val visible: Boolean\n}\n\n/**\n * Exposes the JavaScript [History](https://developer.mozilla.org/en/docs/Web/API/History) to Kotlin\n *\npublic
external abstract class History {\n open val length: Int\n open var scrollRestoration: ScrollRestoration\n open
val state: Any?\n fun go(delta: Int = definedExternally)\n fun back()\n fun forward()\n fun pushState(data:
Any?, title: String, url: String? = definedExternally)\n fun replaceState(data: Any?, title: String, url: String? =
definedExternally)\n}\n\n/**\n * Exposes the JavaScript [Location](https://developer.mozilla.org/en/docs/Web/API/Location) to Kotlin\n
*\npublic external abstract class Location {\n open var href: String\n open val origin: String\n open var
protocol: String\n open var host: String\n open var hostname: String\n open var port: String\n open var
pathname: String\n open var search: String\n open var hash: String\n open val ancestorOrigins: Array<out
String>\n fun assign(url: String)\n fun replace(url: String)\n fun reload()\n}\n\n/**\n * Exposes the JavaScript
[PopStateEvent](https://developer.mozilla.org/en/docs/Web/API/PopStateEvent) to Kotlin\n *\npublic external
open class PopStateEvent(type: String, eventInitDict: PopStateEventInit = definedExternally) : Event {\n open val
state: Any?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val
AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
PopStateEventInit : EventInit {\n var state: Any? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun PopStateEventInit(state: Any? = null,
bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): PopStateEventInit {\n val o
= js(\"({})\")\n o[\"state\"] = state\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n
o[\"composed\"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[HashChangeEvent](https://developer.mozilla.org/en/docs/Web/API/HashChangeEvent) to Kotlin\n *\npublic
external open class HashChangeEvent(type: String, eventInitDict: HashChangeEventInit = definedExternally) :
Event {\n open val oldURL: String\n open val newURL: String\n\n companion object {\n val NONE:
Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n
val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface HashChangeEventInit : EventInit {\n
var oldURL: String? /* = \"\" */\n get() = definedExternally\n set(value) = definedExternally\n var
newURL: String? /* = \"\" */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun HashChangeEventInit(oldURL:
String? = \"\", newURL: String? = \"\", bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): HashChangeEventInit {\n val o = js(\"({})\")\n o[\"oldURL\"] = oldURL\n o[\"newURL\"]
= newURL\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n
return o\n}\n\n/**\n * Exposes the JavaScript
[PageTransitionEvent](https://developer.mozilla.org/en/docs/Web/API/PageTransitionEvent) to Kotlin\n *\npublic
external open class PageTransitionEvent(type:
String, eventInitDict: PageTransitionEventInit = definedExternally) : Event {\n open val persisted: Boolean\n\n
companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET:
Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface PageTransitionEventInit :
EventInit {\n var persisted: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun PageTransitionEventInit(persisted:

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Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
PageTransitionEventInit {
 val o = js("{}")
 o["persisted"] = persisted
 o["bubbles"] = bubbles
 o["cancelable"] = cancelable
 o["composed"] = composed
 return o
}

/** Exposes the JavaScript [BeforeUnloadEvent](https://developer.mozilla.org/en/docs/Web/API/BeforeUnloadEvent)
to Kotlin */
@public external open class BeforeUnloadEvent : Event {
 var returnValue: String

 companion object {
 val NONE: Short
 val CAPTURING_PHASE: Short
 val AT_TARGET: Short
 val BUBBLING_PHASE: Short
 }
}

@public external abstract class ApplicationCache :
EventTarget {
 open val status: Short
 open var onchecking: ((Event) -> dynamic)?
 open var onerror: ((Event) -> dynamic)?
 open var onnoupdate: ((Event) -> dynamic)?
 open var ondownloading: ((Event) -> dynamic)?
 open var onprogress: ((ProgressEvent) -> dynamic)?
 open var onupdateready: ((Event) -> dynamic)?
 open var oncached: ((Event) -> dynamic)?
 open var onobsolete: ((Event) -> dynamic)?
 fun update()
 fun abort()
 fun swapCache()

 companion object {
 val UNCACHED: Short
 val IDLE: Short
 val CHECKING: Short
 val DOWNLOADING: Short
 val UPDATEREADY: Short
 val OBSOLETE: Short
 }
}

/** Exposes the JavaScript [NavigatorOnLine](https://developer.mozilla.org/en/docs/Web/API/NavigatorOnLine)
to Kotlin */
@public external interface NavigatorOnLine {
 val onLine: Boolean
}

/** Exposes the JavaScript [ErrorEvent](https://developer.mozilla.org/en/docs/Web/API/ErrorEvent)
to Kotlin */
@public external open class ErrorEvent(type: String, eventInitDict: ErrorEventInit = definedExternally) : Event {
 open val message: String
 open val filename: String
 open val lineno: Int
 open val colno: Int
 open val error: Any?

 companion object {
 val NONE: Short
 val CAPTURING_PHASE: Short
 val AT_TARGET: Short
 val BUBBLING_PHASE: Short
 }
}

@public external interface ErrorEventInit : EventInit {
 var message: String? /* = "" */
 get() = definedExternally
 set(value) = definedExternally
 var filename: String? /* = "" */
 get() = definedExternally
 set(value) = definedExternally
 var lineno: Int? /* = 0 */
 get() = definedExternally
 set(value) = definedExternally
 var colno: Int? /* = 0 */
 get() = definedExternally
 set(value) = definedExternally
 var error: Any? /* = null */
 get() = definedExternally
 set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
@public inline fun ErrorEventInit(message: String? = "", filename: String? = "", lineno: Int? = 0, colno: Int? = 0, error: Any? = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ErrorEventInit {
 val o = js("{}")
 o["message"] = message
 o["filename"] = filename
 o["lineno"] = lineno
 o["colno"] = colno
 o["error"] = error
 o["bubbles"] = bubbles
 o["cancelable"] = cancelable
 o["composed"] = composed
 return o
}

/** Exposes the JavaScript [PromiseRejectionEvent](https://developer.mozilla.org/en/docs/Web/API/PromiseRejectionEvent)
to Kotlin */
@public external open class PromiseRejectionEvent(type: String, eventInitDict: PromiseRejectionEventInit) :
Event {
 open val promise: Promise<Any?>
 open val reason: Any?

 companion object {
 val NONE: Short
 val CAPTURING_PHASE: Short
 val AT_TARGET: Short
 val BUBBLING_PHASE: Short
 }
}

@public external interface PromiseRejectionEventInit : EventInit {
 var promise: Promise<Any?>?
 var reason: Any?
 get() = definedExternally
 set(value) = definedExternally
}

@Suppress("INVISIBLE_REFERENCE", "INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
@public inline fun PromiseRejectionEventInit(promise: Promise<Any?>?, reason: Any? = undefined, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): PromiseRejectionEventInit {
 val o = js("{}")
 o["promise"] = promise
 o["reason"] = reason
 o["bubbles"] = bubbles
 o["cancelable"] = cancelable
 o["composed"] = composed
 return o
}

/** Exposes the JavaScript [GlobalEventHandlers](https://developer.mozilla.org/en/docs/Web/API/GlobalEventHandlers)
to Kotlin */
@public external interface GlobalEventHandlers {
 var onabort: ((Event) -> dynamic)?
 get() = definedExternally
 set(value) = definedExternally
 var onblur: ((FocusEvent) -> dynamic)?
 get() =

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definedExternally\n set(value) = definedExternally\n var oncancel: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var oncanplay: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var oncanplaythrough: ((Event) -> dynamic)?\n get()
= definedExternally\n set(value) = definedExternally\n var onchange:
((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var onclick:
((MouseEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var onclose:
((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var oncontextmenu:
((MouseEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
oncuechange: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
ondblclick: ((MouseEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n
var ondrag: ((DragEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
ondragend: ((DragEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
ondragenter: ((DragEvent) -> dynamic)?\n get()
= definedExternally\n set(value) = definedExternally\n var ondragexit: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var ondragleave: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var ondragover: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var ondragstart: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var ondrop: ((DragEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var ondurationchange: ((Event) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var onemptied: ((Event) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var onended: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value)
= definedExternally\n var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onfocus: ((FocusEvent) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var oninput: ((InputEvent) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var oninvalid: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onkeydown: ((KeyboardEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var onkeypress: ((KeyboardEvent) ->
dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var onkeyup: ((KeyboardEvent)
-> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var onload: ((Event) ->
dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n
var onloadeddata: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n
var onloadedmetadata: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n var onloadend: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n var onloadstart: ((ProgressEvent) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onmousedown: ((MouseEvent) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onmouseenter: ((MouseEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var onmouseleave: ((MouseEvent) ->
dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var onmousemove:
((MouseEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n
var onmouseout: ((MouseEvent) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n var onmouseover: ((MouseEvent) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onmouseup: ((MouseEvent) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onwheel: ((WheelEvent) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onpause: ((Event) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onplay: ((Event) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onplaying: ((Event) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onprogress: ((ProgressEvent) -> dynamic)?\n get() = definedExternally\n

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set(value) = definedExternally\n var onratechange: ((Event) -> dynamic)?\n
 get() = definedExternally\n set(value) = definedExternally\n var onreset: ((Event) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var onresize: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onscroll: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onseeked: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onseeking: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onselect: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onshow: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onstalled: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n
 var onsubmit: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
onsuspend: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
ontimeupdate: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
ontoggle: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
onvolumechange: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n
var onwaiting: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
ongotpointercapture: ((PointerEvent) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n var onlostpointercapture: ((PointerEvent) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onpointerdown:
((PointerEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
onpointermove: ((PointerEvent) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n var onpointerup: ((PointerEvent) -> dynamic)?\n get() = definedExternally\n
set(value) = definedExternally\n var onpointercancel: ((PointerEvent) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onpointerover: ((PointerEvent) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var onpointerout: ((PointerEvent) -> dynamic)?\n
 get() = definedExternally\n set(value) = definedExternally\n var onpointerenter: ((PointerEvent) ->
dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var onpointerleave:
((PointerEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n}\n\n/**\n
* Exposes the JavaScript
[WindowEventHandlers](https://developer.mozilla.org/en/docs/Web/API/WindowEventHandlers) to Kotlin\n
*\n\npublic external interface WindowEventHandlers {\n var onafterprint: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onbeforeprint: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onbeforeunload: ((BeforeUnloadEvent) ->
String)?\n get() = definedExternally\n set(value) = definedExternally\n var onhashchange:
((HashChangeEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
onlanguagechange: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n
var onmessage: ((MessageEvent) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n var onoffline: ((Event) -> dynamic)?\n
 get() = definedExternally\n set(value) = definedExternally\n var ononline: ((Event) -> dynamic)?\n
get() = definedExternally\n set(value) = definedExternally\n var onpagehide: ((PageTransitionEvent) ->
dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var onpageshow:
((PageTransitionEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n var
onpopstate: ((PopStateEvent) -> dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n
var onrejectionhandled: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n var onstorage: ((StorageEvent) -> dynamic)?\n get() = definedExternally\n set(value)
= definedExternally\n var onunhandledrejection: ((PromiseRejectionEvent) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onunload: ((Event) ->

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dynamic)?\n get() = definedExternally\n set(value) = definedExternally\n}\n\npublic external interface
DocumentAndElementEventHandlers {\n var oncopy: ((ClipboardEvent) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var oncut: ((ClipboardEvent) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n var onpaste: ((ClipboardEvent) -> dynamic)?\n get()
= definedExternally\n set(value) = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[WindowOrWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WindowOrWorkerGlobalScope)
to Kotlin\n */\n\npublic external interface WindowOrWorkerGlobalScope {\n val origin: String\n val caches:
CacheStorage\n fun btoa(data: String): String\n fun atob(data: String): String\n fun setTimeout(handler:
dynamic, timeout: Int = definedExternally, vararg arguments: Any?): Int\n fun clearTimeout(handle: Int =
definedExternally)\n
 fun setInterval(handler: dynamic, timeout: Int = definedExternally, vararg arguments: Any?): Int\n fun
clearInterval(handle: Int = definedExternally)\n fun createImageBitmap(image: ImageBitmapSource, options:
ImageBitmapOptions = definedExternally): Promise<ImageBitmap>\n fun createImageBitmap(image:
ImageBitmapSource, sx: Int, sy: Int, sw: Int, sh: Int, options: ImageBitmapOptions = definedExternally):
Promise<ImageBitmap>\n fun fetch(input: dynamic, init: RequestInit = definedExternally):
Promise<Response>\n}\n\n/**\n * Exposes the JavaScript
[Navigator](https://developer.mozilla.org/en/docs/Web/API/Navigator) to Kotlin\n */\n\npublic external abstract class
Navigator : NavigatorID, NavigatorLanguage, NavigatorOnLine, NavigatorContentUtils, NavigatorCookies,
NavigatorPlugins, NavigatorConcurrentHardware {\n open val clipboard: Clipboard\n open val mediaDevices:
MediaDevices\n open val maxTouchPoints: Int\n open val serviceWorker: ServiceWorkerContainer\n
 fun requestMediaKeySystemAccess(keySystem: String, supportedConfigurations:
Array<MediaKeySystemConfiguration>): Promise<MediaKeySystemAccess>\n fun getUserMedia(constraints:
MediaStreamConstraints, successCallback: (MediaStream) -> Unit, errorCallback: (dynamic) -> Unit)\n fun
vibrate(pattern: dynamic): Boolean\n}\n\n/**\n * Exposes the JavaScript
[NavigatorID](https://developer.mozilla.org/en/docs/Web/API/NavigatorID) to Kotlin\n */\n\npublic external interface
NavigatorID {\n val appCodeName: String\n val appName: String\n val appVersion: String\n val platform:
String\n val product: String\n val productSub: String\n val userAgent: String\n val vendor: String\n val
vendorSub: String\n val oscpu: String\n fun taintEnabled(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[NavigatorLanguage](https://developer.mozilla.org/en/docs/Web/API/NavigatorLanguage) to Kotlin\n */\n\npublic
external interface NavigatorLanguage {\n val language: String\n
 val languages: Array<out String>\n}\n\npublic external interface NavigatorContentUtils {\n fun
registerProtocolHandler(scheme: String, url: String, title: String)\n fun registerContentHandler(mimeType: String,
url: String, title: String)\n fun isProtocolHandlerRegistered(scheme: String, url: String): String\n fun
isContentHandlerRegistered(mimeType: String, url: String): String\n fun unregisterProtocolHandler(scheme:
String, url: String)\n fun unregisterContentHandler(mimeType: String, url: String)\n}\n\npublic external interface
NavigatorCookies {\n val cookieEnabled: Boolean\n}\n\n/**\n * Exposes the JavaScript
[NavigatorPlugins](https://developer.mozilla.org/en/docs/Web/API/NavigatorPlugins) to Kotlin\n */\n\npublic
external interface NavigatorPlugins {\n val plugins: PluginArray\n val mimeTypes: MimeTypeError\n fun
javaEnabled(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[PluginArray](https://developer.mozilla.org/en/docs/Web/API/PluginArray) to
Kotlin\n */\n\npublic external abstract class PluginArray : ItemArrayLike<Plugin> {\n fun refresh(reload: Boolean
= definedExternally)\n override fun item(index: Int): Plugin?\n fun namedItem(name: String):
Plugin?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun PluginArray.get(index: Int):
Plugin? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun PluginArray.get(name:
String): Plugin? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[MimeTypeArray](https://developer.mozilla.org/en/docs/Web/API/MimeTypeArray) to Kotlin\n */\n\npublic external

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abstract class MimeToArray : ItemArrayLike<MimeType> {
 override fun item(index: Int): MimeType?
 fun namedItem(name: String): MimeType?
}
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun MimeToArray.get(index: Int): MimeType? = asDynamic()[index]
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun MimeToArray.get(name: String): MimeType? = asDynamic()[name]
/** Exposes the JavaScript
[Plugin](https://developer.mozilla.org/en/docs/Web/API/Plugin) to Kotlin
*/
public external abstract class Plugin : ItemArrayLike<MimeType> {
 open val name: String
 open val description: String
 open val filename: String
 override fun item(index: Int): MimeType?
 fun namedItem(name: String): MimeType?
}
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Plugin.get(index: Int): MimeType? = asDynamic()[index]
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline operator fun Plugin.get(name: String): MimeType? = asDynamic()[name]
/** Exposes the JavaScript
[MimeType](https://developer.mozilla.org/en/docs/Web/API/MimeType) to Kotlin
*/
public external abstract class MimeType {
 open val type: String
 open val description: String
 open val suffixes: String
 open val enabledPlugin: Plugin
}
/** Exposes the JavaScript
[ImageBitmap](https://developer.mozilla.org/en/docs/Web/API/ImageBitmap) to Kotlin
*/
public external abstract class ImageBitmap : CanvasImageSource, TexImageSource {
 open val width: Int
 open val height: Int
 fun close()
}
public external interface ImageBitmapOptions {
 var imageOrientation: ImageOrientation? /* = ImageOrientation.NONE */
 get() = definedExternally
 set(value) = definedExternally
 var premultiplyAlpha: PremultiplyAlpha? /* = PremultiplyAlpha.DEFAULT */
 get() = definedExternally
 set(value) = definedExternally
 var colorSpaceConversion: ColorSpaceConversion? /* = ColorSpaceConversion.DEFAULT */
 get() = definedExternally
 set(value) = definedExternally
 var resizeMode: Int?
 get() = definedExternally
 set(value) = definedExternally
 var resizeMode: Int?
 get() = definedExternally
 set(value) = definedExternally
 var resizeMode: Int?
 get() = definedExternally
 set(value) = definedExternally
}
@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")
@kotlin.internal.InlineOnly
public inline fun ImageBitmapOptions(imageOrientation: ImageOrientation? = ImageOrientation.NONE, premultiplyAlpha: PremultiplyAlpha? = PremultiplyAlpha.DEFAULT, colorSpaceConversion: ColorSpaceConversion? = ColorSpaceConversion.DEFAULT, resizeMode: Int? = undefined, resizeMode: Int? = undefined, resizeMode: Int? = undefined, resizeMode: Int? = undefined): ImageBitmapOptions {
 val o = js("{}")
 o["imageOrientation"] = imageOrientation
 o["premultiplyAlpha"] = premultiplyAlpha
 o["colorSpaceConversion"] = colorSpaceConversion
 o["resizeWidth"] = resizeMode
 o["resizeHeight"] = resizeMode
 o["resizeQuality"] = resizeMode
 return o
}
/** Exposes the JavaScript
[MessageEvent](https://developer.mozilla.org/en/docs/Web/API/MessageEvent) to Kotlin
*/
public external open class MessageEvent(type: String, eventInitDict: MessageEventInit = definedExternally) : Event {
 open val data: Any?
 open val origin: String
 open val lastEventId: String
 open val source: UnionMessagePortOrWindowProxy?
 open val ports: Array<out MessagePort>
 fun initMessageEvent(type: String, bubbles: Boolean, cancelable: Boolean, data: Any?, origin: String, lastEventId: String, source: UnionMessagePortOrWindowProxy?, ports: Array<MessagePort>)
}
companion object {
 val NONE: Short
 val CAPTURING_PHASE: Short
 val AT_TARGET: Short
 val BUBBLING_PHASE: Short
}
public external interface MessageEventInit : EventInit {
 var data: Any? /* = null */
 get() = definedExternally
 set(value) = definedExternally
 var origin: String? /* = "" */
 get() = definedExternally
 set(value) = definedExternally
 var lastEventId: String? /* = "" */
 get() = definedExternally
 set(value) = definedExternally
 var source:

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UnionMessagePortOrWindowProxy? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var ports: Array<MessagePort>? /* = arrayOf() */\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MessageEventInit(data: Any? = null,
origin: String? = "", lastEventId: String? = "", source: UnionMessagePortOrWindowProxy? = null, ports:
Array<MessagePort>? = arrayOf(), bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): MessageEventInit {\n val o
= js("{}")\n o["data"] = data\n o["origin"] = origin\n o["lastEventId"] = lastEventId\n o["source"] =
source\n o["ports"] = ports\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[EventSource](https://developer.mozilla.org/en/docs/Web/API/EventSource) to Kotlin\n */\npublic external open
class EventSource(url: String, eventSourceInitDict: EventSourceInit = definedExternally) : EventTarget {\n open
val url: String\n open val withCredentials: Boolean\n open val readyState: Short\n var onopen: ((Event) ->
dynamic)?\n var onmessage: ((MessageEvent) -> dynamic)?\n var onerror: ((Event) -> dynamic)?\n fun
close()\n\n companion object {\n val CONNECTING: Short\n val OPEN: Short\n val CLOSED:
Short\n }\n}\n\npublic external interface EventSourceInit {\n var withCredentials: Boolean? /* = false */\n
get() = definedExternally\n
 set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun EventSourceInit(withCredentials:
Boolean? = false): EventSourceInit {\n val o = js("{}")\n o["withCredentials"] = withCredentials\n return
o\n}\n\n/**\n * Exposes the JavaScript [WebSocket](https://developer.mozilla.org/en/docs/Web/API/WebSocket) to
Kotlin\n */\npublic external open class WebSocket(url: String, protocols: dynamic = definedExternally) :
EventTarget {\n open val url: String\n open val readyState: Short\n open val bufferedAmount: Number\n var
onopen: ((Event) -> dynamic)?\n var onerror: ((Event) -> dynamic)?\n var onclose: ((Event) -> dynamic)?\n
open val extensions: String\n open val protocol: String\n var onmessage: ((MessageEvent) -> dynamic)?\n var
binaryType: BinaryType\n fun close(code: Short = definedExternally, reason: String = definedExternally)\n fun
send(data: String)\n fun send(data: Blob)\n fun send(data: ArrayBuffer)\n fun send(data:
ArrayBufferView)\n\n companion object {\n val CONNECTING: Short\n val OPEN: Short\n val
CLOSING: Short\n val CLOSED: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[CloseEvent](https://developer.mozilla.org/en/docs/Web/API/CloseEvent) to Kotlin\n */\npublic external open class
CloseEvent(type: String, eventInitDict: CloseEventInit = definedExternally) : Event {\n open val wasClean:
Boolean\n open val code: Short\n open val reason: String\n\n companion object {\n val NONE: Short\n
 val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface CloseEventInit : EventInit {\n var wasClean: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var code: Short? /* = 0 */\n get() =
definedExternally\n set(value)
= definedExternally\n var reason: String? /* = "" */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CloseEventInit(wasClean: Boolean? =
false, code: Short? = 0, reason: String? = "", bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): CloseEventInit {\n val o = js("{}")\n o["wasClean"] = wasClean\n o["code"] = code\n
o["reason"] = reason\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[MessageChannel](https://developer.mozilla.org/en/docs/Web/API/MessageChannel) to Kotlin\n */\npublic external
open class MessageChannel {\n open val port1: MessagePort\n open val port2: MessagePort\n}\n\n/**\n *
Exposes the JavaScript [MessagePort](https://developer.mozilla.org/en/docs/Web/API/MessagePort)
to Kotlin\n */\npublic external abstract class MessagePort : EventTarget, UnionMessagePortOrWindowProxy,
UnionMessagePortOrServiceWorker, UnionClientOrMessagePortOrServiceWorker {\n open var onmessage:

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((MessageEvent) -> dynamic)?\n fun postMessage(message: Any?, transfer: Array<dynamic> =
definedExternally)\n fun start()\n fun close()\n}\n\n/**\n * Exposes the JavaScript
[BroadcastChannel](https://developer.mozilla.org/en/docs/Web/API/BroadcastChannel) to Kotlin\n */\n\npublic
external open class BroadcastChannel(name: String) : EventTarget {\n open val name: String\n var onmessage:
((MessageEvent) -> dynamic)?\n fun postMessage(message: Any?)\n fun close()\n}\n\n/**\n * Exposes the
JavaScript [WorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/WorkerGlobalScope) to Kotlin\n
*/\n\npublic external abstract class WorkerGlobalScope : EventTarget, WindowOrWorkerGlobalScope,
GlobalPerformance {\n open val self: WorkerGlobalScope\n open
val location: WorkerLocation\n open val navigator: WorkerNavigator\n open var onerror: ((dynamic, String, Int,
Int, Any?) -> dynamic)?\n open var onlanguagechange: ((Event) -> dynamic)?\n open var onoffline: ((Event) ->
dynamic)?\n open var ononline: ((Event) -> dynamic)?\n open var onrejectionhandled: ((Event) -> dynamic)?\n
open var onunhandledrejection: ((PromiseRejectionEvent) -> dynamic)?\n fun importScripts(vararg urls:
String)\n}\n\n/**\n * Exposes the JavaScript
[DedicatedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/DedicatedWorkerGlobalScope) to
Kotlin\n */\n\npublic external abstract class DedicatedWorkerGlobalScope : WorkerGlobalScope {\n open var
onmessage: ((MessageEvent) -> dynamic)?\n fun postMessage(message: Any?, transfer: Array<dynamic> =
definedExternally)\n fun close()\n}\n\n/**\n * Exposes the JavaScript
[SharedWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/SharedWorkerGlobalScope) to
Kotlin\n */\n\npublic
external abstract class SharedWorkerGlobalScope : WorkerGlobalScope {\n open val name: String\n open val
applicationCache: ApplicationCache\n open var onconnect: ((Event) -> dynamic)?\n fun close()\n}\n\n/**\n *
Exposes the JavaScript [AbstractWorker](https://developer.mozilla.org/en/docs/Web/API/AbstractWorker) to
Kotlin\n */\n\npublic external interface AbstractWorker {\n var onerror: ((Event) -> dynamic)?\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[Worker](https://developer.mozilla.org/en/docs/Web/API/Worker) to Kotlin\n */\n\npublic external open class
Worker(scriptURL: String, options: WorkerOptions = definedExternally) : EventTarget, AbstractWorker {\n var
onmessage: ((MessageEvent) -> dynamic)?\n override var onerror: ((Event) -> dynamic)?\n fun terminate()\n
fun postMessage(message: Any?, transfer: Array<dynamic> = definedExternally)\n}\n\n\npublic external interface
WorkerOptions
{\n var type: WorkerType? /* = WorkerType.CLASSIC */\n get() = definedExternally\n set(value) =
definedExternally\n var credentials: RequestCredentials? /* = RequestCredentials.OMIT */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\n\npublic inline fun WorkerOptions(type: WorkerType? =
WorkerType.CLASSIC, credentials: RequestCredentials? = RequestCredentials.OMIT): WorkerOptions {\n val o
= js(\"({})\")\n o[\"type\"] = type\n o[\"credentials\"] = credentials\n return o\n}\n\n\n/**\n * Exposes the
JavaScript [SharedWorker](https://developer.mozilla.org/en/docs/Web/API/SharedWorker) to Kotlin\n */\n\npublic
external open class SharedWorker(scriptURL: String, name: String = definedExternally, options: WorkerOptions =
definedExternally) : EventTarget, AbstractWorker {\n open val port: MessagePort\n override var onerror:
((Event) -> dynamic)?\n}\n\n\n/**\n * Exposes the JavaScript
[NavigatorConcurrentHardware](https://developer.mozilla.org/en/docs/Web/API/NavigatorConcurrentHardware) to
Kotlin\n */\n\npublic external interface NavigatorConcurrentHardware {\n val hardwareConcurrency:
Number\n}\n\n\n/**\n * Exposes the JavaScript
[WorkerNavigator](https://developer.mozilla.org/en/docs/Web/API/WorkerNavigator) to Kotlin\n */\n\npublic
external abstract class WorkerNavigator : NavigatorID, NavigatorLanguage, NavigatorOnLine,
NavigatorConcurrentHardware {\n open val serviceWorker: ServiceWorkerContainer\n}\n\n\n/**\n * Exposes the
JavaScript [WorkerLocation](https://developer.mozilla.org/en/docs/Web/API/WorkerLocation) to Kotlin\n
*/\n\npublic external abstract class WorkerLocation {\n open val href: String\n open val origin: String\n open val

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protocol: String\n open val host: String\n open val hostname: String\n open val port: String\n open val
pathname: String\n open val search: String\n open val hash:
String\n}\n\n/**\n * Exposes the JavaScript [Storage](https://developer.mozilla.org/en/docs/Web/API/Storage) to
Kotlin\n */\n\npublic external abstract class Storage {\n open val length: Int\n fun key(index: Int): String?\n fun
removeItem(key: String)\n fun clear()\n fun getItem(key: String): String?\n fun setItem(key: String, value:
String)\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Storage.get(key: String):
String? = asDynamic()[key]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun Storage.set(key: String, value:
String) { asDynamic()[key] = value }\n\n\n/**\n * Exposes the JavaScript
[WindowSessionStorage](https://developer.mozilla.org/en/docs/Web/API/WindowSessionStorage) to Kotlin\n
*/\n\npublic external interface WindowSessionStorage {\n val sessionStorage: Storage\n}\n\n\n/**\n * Exposes the
JavaScript [WindowLocalStorage](https://developer.mozilla.org/en/docs/Web/API/WindowLocalStorage)
to Kotlin\n */\n\npublic external interface WindowLocalStorage {\n val localStorage: Storage\n}\n\n\n/**\n *
Exposes the JavaScript [StorageEvent](https://developer.mozilla.org/en/docs/Web/API/StorageEvent) to Kotlin\n
*/\n\npublic external open class StorageEvent(type: String, eventInitDict: StorageEventInit = definedExternally) :
Event {\n open val key: String?\n open val oldValue: String?\n open val newValue: String?\n open val url:
String\n open val storageArea: Storage?\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\n\npublic external interface StorageEventInit : EventInit {\n var key: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var oldValue: String? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n
var newValue: String? /* = null */\n get() = definedExternally\n set(value) = definedExternally\n var url:
String? /* = "" */\n get() = definedExternally\n set(value) = definedExternally\n var storageArea:
Storage? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline fun StorageEventInit(key: String? = null,
oldValue: String? = null, newValue: String? = null, url: String? = "", storageArea: Storage? = null, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): StorageEventInit {\n val o =
js("{}")\n o["key"] = key\n o["oldValue"] = oldValue\n o["newValue"] = newValue\n o["url"] =
url\n o["storageArea"] = storageArea\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n
o["composed"] = composed\n return o\n}\n\n\npublic
external abstract class HTMLAppletElement : HTMLElement {\n open var align: String\n open var alt: String\n
open var archive: String\n open var code: String\n open var codeBase: String\n open var height: String\n
open var hspace: Int\n open var name: String\n open var _object: String\n open var vspace: Int\n open var
width: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS:
Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n\n/**\n * Exposes the JavaScript
[HTMLMarqueeElement](https://developer.mozilla.org/en/docs/Web/API/HTMLMarqueeElement) to Kotlin\n
*/\n\npublic external abstract class HTMLMarqueeElement : HTMLElement {\n open var behavior: String\n open
var bgColor: String\n open var direction: String\n open var height: String\n open var hspace: Int\n open var

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loop: Int\n open var scrollAmount: Int\n open var scrollDelay: Int\n open var trueSpeed: Boolean\n open var
vspace: Int\n open var width: String\n open var onbounce: ((Event) -> dynamic)?\n open var onfinish: ((Event)
-> dynamic)?\n open var onstart: ((Event) -> dynamic)?\n fun start()\n fun stop()\n companion object {\n
val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE:
Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[HTMLFrameSetElement](https://developer.mozilla.org/en/docs/Web/API/HTMLFrameSetElement) to Kotlin\n
*\n\npublic external abstract class HTMLFrameSetElement : HTMLElement, WindowEventHandlers {\n open var
cols: String\n open var rows: String\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class
HTMLFrameElement : HTMLElement {\n open var name: String\n open var scrolling: String\n open var src:
String\n open var frameBorder: String\n open var longDesc: String\n open var noResize: Boolean\n open val
contentDocument: Document?\n open
val contentWindow: Window?\n open var marginHeight: String\n open var marginWidth: String\n\n
companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class
HTMLDirectoryElement : HTMLElement {\n open var compact: Boolean\n\n companion
object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE:
Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val

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[ParentNode](https://developer.mozilla.org/en/docs/Web/API/ParentNode) to Kotlin\n */\npublic external interface
ParentNode {\n val children: HTMLCollection\n val firstElementChild: Element?\n get() =
definedExternally\n val lastElementChild: Element?\n get() = definedExternally\n val childElementCount:
Int\n fun prepend(vararg nodes: dynamic)\n fun append(vararg nodes: dynamic)\n fun querySelector(selectors:
String): Element?\n fun querySelectorAll(selectors: String): NodeList\n}\n\n/**\n * Exposes the JavaScript
[NonDocumentTypeChildNode](https://developer.mozilla.org/en/docs/Web/API/NonDocumentTypeChildNode) to
Kotlin\n */\npublic external interface
NonDocumentTypeChildNode {\n val previousElementSibling: Element?\n get() = definedExternally\n val
nextElementSibling: Element?\n get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[ChildNode](https://developer.mozilla.org/en/docs/Web/API/ChildNode) to Kotlin\n */\npublic external interface
ChildNode {\n fun before(vararg nodes: dynamic)\n fun after(vararg nodes: dynamic)\n fun
replaceWith(vararg nodes: dynamic)\n fun remove()\n}\n\n/**\n * Exposes the JavaScript
[Slotable](https://developer.mozilla.org/en/docs/Web/API/Slotable) to Kotlin\n */\npublic external interface Slotable
{\n val assignedSlot: HTMLSlotElement?\n get() = definedExternally\n}\n\n/**\n * Exposes the JavaScript
[NodeList](https://developer.mozilla.org/en/docs/Web/API/NodeList) to Kotlin\n */\npublic external abstract class
NodeList : ItemArrayLike<Node> {\n override fun item(index: Int):
Node?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic
inline operator fun NodeList.get(index: Int): Node? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[HTMLCollection](https://developer.mozilla.org/en/docs/Web/API/HTMLCollection) to Kotlin\n */\npublic
external abstract class HTMLCollection : ItemArrayLike<Element>, UnionElementOrHTMLCollection {\n
 override fun item(index: Int): Element?\n fun namedItem(name: String):
Element?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun HTMLCollection.get(index:
Int): Element? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun HTMLCollection.get(name:
String): Element? = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[MutationObserver](https://developer.mozilla.org/en/docs/Web/API/MutationObserver) to Kotlin\n */\npublic
external open class MutationObserver(callback: (Array<MutationRecord>,
MutationObserver) -> Unit) {\n fun observe(target: Node, options: MutationObserverInit = definedExternally)\n
 fun disconnect()\n fun takeRecords(): Array<MutationRecord>\n}\n\n/**\n * Exposes the JavaScript
[MutationObserverInit](https://developer.mozilla.org/en/docs/Web/API/MutationObserverInit) to Kotlin\n
/\npublic external interface MutationObserverInit {\n var childList: Boolean? / = false */\n get() =
definedExternally\n set(value) = definedExternally\n var attributes: Boolean?\n get() =
definedExternally\n set(value) = definedExternally\n var characterData: Boolean?\n get() =
definedExternally\n set(value) = definedExternally\n var subtree: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var attributeOldValue: Boolean?\n get() =
definedExternally\n set(value) = definedExternally\n var characterDataOldValue: Boolean?\n get() =
definedExternally\n set(value) = definedExternally\n var attributeFilter: Array<String>?\n get() = definedExternally\n
 set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MutationObserverInit(childList:
Boolean? = false, attributes: Boolean? = undefined, characterData: Boolean? = undefined, subtree: Boolean? = false,
attributeOldValue: Boolean? = undefined, characterDataOldValue: Boolean? = undefined, attributeFilter:
Array<String>? = undefined): MutationObserverInit {\n val o = js(\"({})\")\n o[\"childList\"] = childList\n
o[\"attributes\"] = attributes\n o[\"characterData\"] = characterData\n o[\"subtree\"] = subtree\n
o[\"attributeOldValue\"] = attributeOldValue\n o[\"characterDataOldValue\"] = characterDataOldValue\n
o[\"attributeFilter\"] = attributeFilter\n return o\n}\n\n/**\n * Exposes the JavaScript

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[MutationRecord](https://developer.mozilla.org/en/docs/Web/API/MutationRecord) to Kotlin\n \*\\npublic external abstract class MutationRecord {\n open val type: String\n open val target: Node\n open val addedNodes: NodeList\n open val removedNodes: NodeList\n open val previousSibling: Node?\n open val nextSibling: Node?\n open val attributeName: String?\n open val attributeNamespace: String?\n open val oldValue: String?\n}\n\n\*\*\n \* Exposes the JavaScript

[Node](https://developer.mozilla.org/en/docs/Web/API/Node) to Kotlin\n \*\\npublic external abstract class Node : EventTarget {\n open val nodeType: Short\n open val nodeName: String\n open val baseURI: String\n open val isConnected: Boolean\n open val ownerDocument: Document?\n open val parentNode: Node?\n open val parentElement: Element?\n open val childNodes: NodeList\n open val firstChild: Node?\n open val lastChild: Node?\n open val previousSibling: Node?\n open val nextSibling: Node?\n open var nodeValue: String?\n open var textContent: String?\n fun getRootNode(options: GetRootNodeOptions = definedExternally): Node\n fun hasChildNodes(): Boolean\n fun normalize()\n fun cloneNode(deep: Boolean = definedExternally): Node\n fun isEqualNode(otherNode: Node?): Boolean\n fun isSameNode(otherNode: Node?): Boolean\n fun compareDocumentPosition(other: Node): Short\n fun contains(other: Node?): Boolean\n fun lookupPrefix(namespace: String?): String?\n fun lookupNamespaceURI(prefix: String?): String?\n fun isDefaultNamespace(namespace: String?): Boolean\n fun insertBefore(node: Node, child: Node?): Node\n fun appendChild(node: Node): Node\n fun replaceChild(node: Node, child: Node): Node\n fun removeChild(child: Node): Node\n\n companion object {\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\npublic external interface GetRootNodeOptions {\n var composed: Boolean? /\* = false \*/\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE\_REFERENCE\", \"INVISIBLE\_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun GetRootNodeOptions(composed: Boolean? = false): GetRootNodeOptions {\n val o = js(\"({})\")\n o[\"composed\"] = composed\n return o\n}\n\n\*\*\n \* Exposes the JavaScript

[Document](https://developer.mozilla.org/en/docs/Web/API/Document) to Kotlin\n \*\\npublic external open class Document : Node, GlobalEventHandlers, DocumentAndElementEventHandlers, NonElementParentNode, DocumentOrShadowRoot, ParentNode, GeometryUtils {\n open val implementation: DOMImplementation\n open val URL: String\n open val documentURI: String\n open val origin: String\n open val compatMode: String\n open val characterSet: String\n open val charset: String\n open val inputEncoding: String\n open val contentType: String\n open val doctype: DocumentType?\n open val documentElement: Element?\n open val location: Location?\n var domain: String\n open val referrer: String\n var cookie: String\n open val lastModified: String\n open val readyState: DocumentReadyState\n var title: String\n var dir: String\n var body: HTMLElement?\n open val head: HTMLHeadElement?\n open val images: HTMLCollection\n open val embeds: HTMLCollection\n open val plugins: HTMLCollection\n open val links: HTMLCollection\n open val forms: HTMLCollection\n open val scripts: HTMLCollection\n open val currentScript: HTMLScriptElement?\n open val defaultView: Window?\n open val activeElement: Element?\n var designMode: String\n var onreadystatechange: ((Event) -> dynamic)?\n var fgColor: String\n var linkColor: String\n var vlinkColor: String\n var alinkColor: String\n var bgColor: String\n open val anchors: HTMLCollection\n open val applets: HTMLCollection\n open val all: HTMLAllCollection\n open val scrollingElement: Element?\n open

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val styleSheets: StyleSheetList\n open val rootElement: SVGSVGElement?\n open val fullscreenEnabled:
Boolean\n open val fullscreen: Boolean\n var onfullscreenchange: ((Event) -> dynamic)?\n var
onfullscreenerror: ((Event) -> dynamic)?\n override var onabort: ((Event) -> dynamic)?\n override var onblur:
((FocusEvent)
-> dynamic)?\n override var oncancel: ((Event) -> dynamic)?\n override var oncanplay: ((Event) -> dynamic)?\n
 override var oncanplaythrough: ((Event) -> dynamic)?\n override var onchange: ((Event) -> dynamic)?\n
 override var onclick: ((MouseEvent) -> dynamic)?\n override var onclose: ((Event) -> dynamic)?\n override var
oncontextmenu: ((MouseEvent) -> dynamic)?\n override var oncuechange: ((Event) -> dynamic)?\n override var
ondblclick: ((MouseEvent) -> dynamic)?\n override var ondrag: ((DragEvent) -> dynamic)?\n override var
ondragend: ((DragEvent) -> dynamic)?\n override var ondragenter: ((DragEvent) -> dynamic)?\n override var
ondragexit: ((DragEvent) -> dynamic)?\n override var ondragleave: ((DragEvent) -> dynamic)?\n override var
ondragover: ((DragEvent) -> dynamic)?\n override var ondragstart: ((DragEvent) -> dynamic)?\n override var
ondrop: ((DragEvent) -> dynamic)?\n override var ondurationchange: ((Event) -> dynamic)?\n
 override var onemptied: ((Event) -> dynamic)?\n override var onended: ((Event) -> dynamic)?\n override var
onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n override var onfocus: ((FocusEvent) -> dynamic)?\n
 override var oninput: ((InputEvent) -> dynamic)?\n override var oninvalid: ((Event) -> dynamic)?\n override var
onkeydown: ((KeyboardEvent) -> dynamic)?\n override var onkeypress: ((KeyboardEvent) -> dynamic)?\n
 override var onkeyup: ((KeyboardEvent) -> dynamic)?\n override var onload: ((Event) -> dynamic)?\n override
var onloadeddata: ((Event) -> dynamic)?\n override var onloadedmetadata: ((Event) -> dynamic)?\n override var
onloadend: ((Event) -> dynamic)?\n override var onloadstart: ((ProgressEvent) -> dynamic)?\n override var
onmousedown: ((MouseEvent) -> dynamic)?\n override var onmouseenter: ((MouseEvent) -> dynamic)?\n
 override var onmouseleave: ((MouseEvent) -> dynamic)?\n override var onmousemove: ((MouseEvent)
-> dynamic)?\n override var onmouseout: ((MouseEvent) -> dynamic)?\n override var onmouseover:
((MouseEvent) -> dynamic)?\n override var onmouseup: ((MouseEvent) -> dynamic)?\n override var onwheel:
((WheelEvent) -> dynamic)?\n override var onpause: ((Event) -> dynamic)?\n override var onplay: ((Event) ->
dynamic)?\n override var onplaying: ((Event) -> dynamic)?\n override var onprogress: ((ProgressEvent) ->
dynamic)?\n override var onratechange: ((Event) -> dynamic)?\n override var onreset: ((Event) -> dynamic)?\n
 override var onresize: ((Event) -> dynamic)?\n override var onscroll: ((Event) -> dynamic)?\n override var
onseeked: ((Event) -> dynamic)?\n override var onseeking: ((Event) -> dynamic)?\n override var onselect:
((Event) -> dynamic)?\n override var onshow: ((Event) -> dynamic)?\n override var onstalled: ((Event) ->
dynamic)?\n override var onsubmit: ((Event) -> dynamic)?\n override var onsuspend: ((Event) -> dynamic)?\n
 override var ontimeupdate: ((Event) -> dynamic)?\n override var ontoggle: ((Event) -> dynamic)?\n override
var onvolumechange: ((Event) -> dynamic)?\n override var onwaiting: ((Event) -> dynamic)?\n override var
ongotpointercapture: ((PointerEvent) -> dynamic)?\n override var onlostpointercapture: ((PointerEvent) ->
dynamic)?\n override var onpointerdown: ((PointerEvent) -> dynamic)?\n override var onpointermove:
((PointerEvent) -> dynamic)?\n override var onpointerup: ((PointerEvent) -> dynamic)?\n override var
onpointercancel: ((PointerEvent) -> dynamic)?\n override var onpointerover: ((PointerEvent) -> dynamic)?\n
 override var onpointerout: ((PointerEvent) -> dynamic)?\n override var onpointerenter: ((PointerEvent) ->
dynamic)?\n override var onpointerleave: ((PointerEvent) -> dynamic)?\n override var oncopy:
((ClipboardEvent) -> dynamic)?\n override var oncut: ((ClipboardEvent) -> dynamic)?\n override var onpaste:
((ClipboardEvent)
-> dynamic)?\n override val fullscreenElement: Element?\n override val children: HTMLCollection\n override
val firstElementChild: Element?\n override val lastElementChild: Element?\n override val childElementCount:
Int\n fun getElementsByTagName(qualifiedName: String): HTMLCollection\n fun
getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection\n fun
getElementsByTagName(className: String): HTMLCollection\n fun createElement(localName: String,
options: ElementCreationOptions = definedExternally): Element\n fun createElementNS(namespace: String?,
qualifiedName: String, options: ElementCreationOptions = definedExternally): Element\n fun

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createDocumentFragment(): DocumentFragment\n fun createTextNode(data: String): Text\n fun
createCDATASection(data: String): CDATASection\n fun createComment(data: String): Comment\n fun
createProcessingInstruction(target: String, data: String): ProcessingInstruction\n fun importNode(node:
Node, deep: Boolean = definedExternally): Node\n fun adoptNode(node: Node): Node\n fun
createAttribute(localName: String): Attr\n fun createAttributeNS(namespace: String?, qualifiedName: String):
Attr\n fun createEvent(`interface`: String): Event\n fun createRange(): Range\n fun createNodeIterator(root:
Node, whatToShow: Int = definedExternally, filter: NodeFilter? = definedExternally): NodeIterator\n fun
createNodeIterator(root: Node, whatToShow: Int = definedExternally, filter: ((Node) -> Short)? =
definedExternally): NodeIterator\n fun createTreeWalker(root: Node, whatToShow: Int = definedExternally, filter:
NodeFilter? = definedExternally): TreeWalker\n fun createTreeWalker(root: Node, whatToShow: Int =
definedExternally, filter: ((Node) -> Short)? = definedExternally): TreeWalker\n fun
getElementsByName(elementName: String): NodeList\n fun open(type: String = definedExternally, replace:
String = definedExternally): Document\n fun
open(url: String, name: String, features: String): Window\n fun close()\n fun write(vararg text: String)\n fun
writeln(vararg text: String)\n fun hasFocus(): Boolean\n fun execCommand(commandId: String, showUI:
Boolean = definedExternally, value: String = definedExternally): Boolean\n fun
queryCommandEnabled(commandId: String): Boolean\n fun queryCommandIndeterm(commandId: String):
Boolean\n fun queryCommandState(commandId: String): Boolean\n fun queryCommandSupported(commandId:
String): Boolean\n fun queryCommandValue(commandId: String): String\n fun clear()\n fun captureEvents()\n
fun releaseEvents()\n fun elementFromPoint(x: Double, y: Double): Element?\n fun elementsFromPoint(x:
Double, y: Double): Array<Element>\n fun caretPositionFromPoint(x: Double, y: Double): CaretPosition?\n fun
createTouch(view: Window, target: EventTarget, identifier: Int, pageX: Int, pageY: Int, screenX: Int, screenY: Int):
Touch\n fun createTouchList(vararg
touches: Touch): TouchList\n fun exitFullscreen(): Promise<Unit>\n override fun getElementById(elementId:
String): Element?\n override fun prepend(vararg nodes: dynamic)\n override fun append(vararg nodes:
dynamic)\n override fun querySelector(selectors: String): Element?\n override fun querySelectorAll(selectors:
String): NodeList\n override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */):
Array<DOMQuad>\n override fun convertQuadFromNode(quad: dynamic, from: dynamic, options:
ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n override fun convertRectFromNode(rect:
DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n
override fun convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMPoint\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE:
Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n
}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun Document.get(name: String):
dynamic = asDynamic()[name]\n\n/**\n * Exposes the JavaScript
[XMLDocument](https://developer.mozilla.org/en/docs/Web/API/XMLDocument) to Kotlin\n *\npublic external
open class XMLDocument
: Document {\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val

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ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external interface
ElementCreationOptions {\n var `is`: String?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\`"INVISIBLE_REFERENCE"`,
\`"INVISIBLE_MEMBER"`)@kotlin.internal.InlineOnly\npublic
inline fun ElementCreationOptions(`is`: String? = undefined): ElementCreationOptions {\n val o = js(\`"({})"\`)\n
o[\`"is"\`] = `is`\n return o\n}\n\n/**\n * Exposes the JavaScript
[DOMImplementation](https://developer.mozilla.org/en/docs/Web/API/DOMImplementation) to Kotlin\n
*\npublic external abstract class DOMImplementation {\n fun createDocumentType(qualifiedName: String,
publicId: String, systemId: String): DocumentType\n fun createDocument(namespace: String?, qualifiedName:
String, doctype: DocumentType? = definedExternally): XMLDocument\n fun createHTMLDocument(title: String
= definedExternally): Document\n fun hasFeature(): Boolean\n}\n\n/**\n * Exposes the JavaScript
[DocumentType](https://developer.mozilla.org/en/docs/Web/API/DocumentType) to Kotlin\n
*\npublic external
abstract class DocumentType : Node, ChildNode {\n open val name: String\n open val publicId: String\n open
val systemId: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n
val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
 val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[DocumentFragment](https://developer.mozilla.org/en/docs/Web/API/DocumentFragment) to Kotlin\n
*\npublic
external open class DocumentFragment : Node, NonElementParentNode, ParentNode
{\n override val children: HTMLCollection\n override val firstElementChild: Element?\n override val
lastElementChild: Element?\n override val childElementCount: Int\n override fun getElementById(elementId:
String): Element?\n override fun prepend(vararg nodes: dynamic)\n override fun append(vararg nodes:
dynamic)\n override fun querySelector(selectors: String): Element?\n override fun querySelectorAll(selectors:
String): NodeList\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the
JavaScript [ShadowRoot](https://developer.mozilla.org/en/docs/Web/API/ShadowRoot) to Kotlin\n
*\npublic
external open class ShadowRoot : DocumentFragment, DocumentOrShadowRoot {\n open val mode:

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ShadowRootMode\n open val host: Element\n override val fullscreenElement: Element?\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n
 val NOTATION_NODE: Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val
DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n
val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n /**\n * Exposes
the JavaScript [Element](https://developer.mozilla.org/en/docs/Web/API/Element) to Kotlin\n
*\n\n public external
abstract class Element : Node, ParentNode, NonDocumentTypeChildNode, ChildNode, Slotable,
GeometryUtils,
UnionElementOrHTMLCollection, UnionElementOrRadioNodeList, UnionElementOrMouseEvent,
UnionElementOrProcessingInstruction {\n open val namespaceURI: String?\n open val
prefix: String?\n open
val localName: String\n open val tagName: String\n open var id: String\n open var
className: String\n open
val classList: DOMTokenList\n open var slot: String\n open val attributes: NamedNodeMap\n
 open
val shadowRoot: ShadowRoot?\n open var scrollTop: Double\n open var scrollLeft: Double\n
 open val
scrollWidth: Int\n open val scrollHeight: Int\n open val clientTop: Int\n open val
clientLeft: Int\n open val
clientWidth: Int\n open val clientHeight: Int\n open var innerHTML: String\n open
var outerHTML: String\n
 fun hasAttributes(): Boolean\n fun getAttributeNames(): Array<String>\n fun
getAttribute(qualifiedName:
String): String?\n fun getAttributeNS(namespace: String?, localName: String): String?\n
 fun
setAttribute(qualifiedName: String, value: String)\n fun setAttributeNS(namespace: String?,
qualifiedName:
String, value: String)\n fun removeAttribute(qualifiedName: String)\n fun
removeAttributeNS(namespace:
String?, localName: String)\n fun hasAttribute(qualifiedName: String): Boolean\n fun
hasAttributeNS(namespace: String?, localName: String): Boolean\n fun
getAttributeNode(qualifiedName: String):
Attr?\n fun
getAttributeNodeNS(namespace:
String?, localName: String): Attr?\n fun setAttributeNode(attr: Attr): Attr?\n fun
setAttributeNodeNS(attr: Attr):
Attr?\n fun removeAttributeNode(attr: Attr): Attr\n fun attachShadow(init: ShadowRootInit):
ShadowRoot\n
 fun closest(selectors: String): Element?\n fun matches(selectors: String): Boolean\n
 fun
webkitMatchesSelector(selectors: String): Boolean\n fun getElementsByTagName(qualifiedName:
String):
HTMLCollection\n fun
getElementsByTagNameNS(namespace: String?, localName: String): HTMLCollection\n
 fun
getElementsByTagName(classNames: String): HTMLCollection\n fun insertAdjacentElement(
where: String,
element: Element): Element?\n fun insertAdjacentText(where: String, data: String)\n
 fun getClientRects():
Array<DOMRect>\n fun getBoundingClientRect(): DOMRect\n fun scrollIntoView()\n fun
scrollIntoView(arg: dynamic)\n fun scroll(options: ScrollToOptions = definedExternally)\n
 fun scroll(x: Double,
y:
Double)\n fun scrollTo(options: ScrollToOptions = definedExternally)\n fun
scrollTo(x: Double, y: Double)\n
 fun scrollBy(options: ScrollToOptions = definedExternally)\n fun scrollBy(x: Double,
y: Double)\n
 fun insertAdjacentHTML(position: String, text: String)\n fun setPointerCapture(pointerId:
Int)\n fun
releasePointerCapture(pointerId: Int)\n fun hasPointerCapture(pointerId: Int): Boolean\n
 fun requestFullscreen():
Promise<Unit>\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:

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Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external interface
ShadowRootInit {\n var mode: ShadowRootMode?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ShadowRootInit(mode:
ShadowRootMode?): ShadowRootInit {\n val o = js("{}")\n o["mode"] = mode\n return o\n}\n\n/**\n *
Exposes the JavaScript [NamedNodeMap](https://developer.mozilla.org/en/docs/Web/API/NamedNodeMap) to
Kotlin\n */\npublic external abstract class NamedNodeMap : ItemArrayLike<Attr> {\n fun
getNamedItemNS(namespace: String?, localName: String): Attr?\n fun setNamedItem(attr: Attr): Attr?\n fun
setNamedItemNS(attr: Attr): Attr?\n fun removeNamedItem(qualifiedName: String): Attr\n fun
removeNamedItemNS(namespace: String?,
 localName: String): Attr\n override fun item(index: Int): Attr?\n fun getNamedItem(qualifiedName: String):
Attr?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun NamedNodeMap.get(index:
Int): Attr? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun
NamedNodeMap.get(qualifiedName: String): Attr? = asDynamic()[qualifiedName]\n\n/**\n * Exposes the
JavaScript [Attr](https://developer.mozilla.org/en/docs/Web/API/Attr) to Kotlin\n */\npublic external abstract class
Attr : Node {\n open val namespaceURI: String?\n open val prefix: String?\n open val localName: String\n open
val name: String\n open var value: String\n open val ownerElement: Element?\n open val specified:
Boolean\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
 val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[CharacterData](https://developer.mozilla.org/en/docs/Web/API/CharacterData) to Kotlin\n */\npublic external
abstract class CharacterData : Node, NonDocumentTypeChildNode, ChildNode {\n open var data: String\n open
val length: Int\n fun substringData(offset: Int, count: Int): String\n fun appendData(data:
String)\n fun insertData(offset: Int, data: String)\n fun deleteData(offset: Int, count: Int)\n fun
replaceData(offset: Int, count: Int, data: String)\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[Text](https://developer.mozilla.org/en/docs/Web/API/Text)
to Kotlin\n */\npublic external open class Text(data: String = definedExternally) : CharacterData, Slotable,
GeometryUtils {\n open val wholeText: String\n override val assignedSlot: HTMLSlotElement?\n override val
previousElementSibling: Element?\n override val nextElementSibling: Element?\n fun splitText(offset: Int):

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Text\n override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n
override fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n override fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMPoint\n override fun before(vararg nodes: dynamic)\n override fun after(vararg
nodes:
dynamic)\n override fun replaceWith(vararg nodes: dynamic)\n override fun remove()\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n/**\n * Exposes the JavaScript
[CDATASection](https://developer.mozilla.org/en/docs/Web/API/CDATASection) to Kotlin\n
*/\npublic external open class CDATASection : Text {\n companion object {\n val ELEMENT_NODE:
Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE:
Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n/**\n * Exposes the JavaScript
[ProcessingInstruction](https://developer.mozilla.org/en/docs/Web/API/ProcessingInstruction) to Kotlin\n
*/\npublic external abstract
class ProcessingInstruction : CharacterData, LinkStyle, UnionElementOrProcessingInstruction {\n open val
target: String\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n/**\n * Exposes the JavaScript
[Comment](https://developer.mozilla.org/en/docs/Web/API/Comment)
to Kotlin\n */\npublic external open class Comment(data: String = definedExternally) : CharacterData {\n
override val previousElementSibling: Element?\n override val nextElementSibling: Element?\n override fun
before(vararg nodes: dynamic)\n override fun after(vararg nodes: dynamic)\n override fun replaceWith(vararg
nodes: dynamic)\n override fun remove()\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val

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PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n
 val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [Range](https://developer.mozilla.org/en/docs/Web/API/Range) to Kotlin\n */\npublic external open
class Range {\n open val startContainer: Node\n open val startOffset: Int\n open val endContainer: Node\n
open val endOffset: Int\n open val collapsed: Boolean\n open val commonAncestorContainer: Node\n fun
setStart(node: Node, offset: Int)\n fun setEnd(node: Node, offset: Int)\n fun setStartBefore(node: Node)\n fun
setStartAfter(node: Node)\n fun setEndBefore(node: Node)\n fun setEndAfter(node: Node)\n fun
collapse(toStart: Boolean = definedExternally)\n fun selectNode(node: Node)\n fun selectNodeContents(node:
Node)\n fun compareBoundaryPoints(how: Short, sourceRange: Range): Short\n fun deleteContents()\n fun
extractContents(): DocumentFragment\n
 fun cloneContents(): DocumentFragment\n fun insertNode(node: Node)\n fun surroundContents(newParent:
Node)\n fun cloneRange(): Range\n fun detach()\n fun isPointInRange(node: Node, offset: Int): Boolean\n
fun comparePoint(node: Node, offset: Int): Short\n fun intersectsNode(node: Node): Boolean\n fun
getClientRects(): Array<DOMRect>\n fun getBoundingClientRect(): DOMRect\n fun
createContextualFragment(fragment: String): DocumentFragment\n\n companion object {\n val
START_TO_START: Short\n val START_TO_END: Short\n val END_TO_END: Short\n val
END_TO_START: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[NodeIterator](https://developer.mozilla.org/en/docs/Web/API/NodeIterator) to Kotlin\n */\npublic external abstract
class NodeIterator {\n open val root: Node\n open val referenceNode: Node\n open val
pointerBeforeReferenceNode: Boolean\n open val whatToShow: Int\n open val filter: NodeFilter?\n
 fun nextNode(): Node?\n fun previousNode(): Node?\n fun detach()\n}\n\n/**\n * Exposes the JavaScript
[TreeWalker](https://developer.mozilla.org/en/docs/Web/API/TreeWalker) to Kotlin\n */\npublic external abstract
class TreeWalker {\n open val root: Node\n open val whatToShow: Int\n open val filter: NodeFilter?\n open
var currentNode: Node\n fun parentNode(): Node?\n fun firstChild(): Node?\n fun lastChild(): Node?\n fun
previousSibling(): Node?\n fun nextSibling(): Node?\n fun previousNode(): Node?\n fun nextNode():
Node?\n}\n\n/**\n * Exposes the JavaScript
[NodeFilter](https://developer.mozilla.org/en/docs/Web/API/NodeFilter) to Kotlin\n
*/\n\n@Suppress(\n "NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external interface NodeFilter {\n
 fun acceptNode(node: Node): Short\n\n companion object {\n val FILTER_ACCEPT: Short\n val
FILTER_REJECT: Short\n val FILTER_SKIP: Short\n val SHOW_ALL: Int\n val
SHOW_ELEMENT:
Int\n val SHOW_ATTRIBUTE: Int\n val SHOW_TEXT: Int\n val SHOW_CDATA_SECTION: Int\n
 val SHOW_ENTITY_REFERENCE: Int\n val SHOW_ENTITY: Int\n val
SHOW_PROCESSING_INSTRUCTION: Int\n val SHOW_COMMENT: Int\n val SHOW_DOCUMENT:
Int\n val SHOW_DOCUMENT_TYPE: Int\n val SHOW_DOCUMENT_FRAGMENT: Int\n val
SHOW_NOTATION: Int\n }\n}\n\n/**\n * Exposes the JavaScript
[DOMTokenList](https://developer.mozilla.org/en/docs/Web/API/DOMTokenList) to Kotlin\n */\npublic external
abstract class DOMTokenList : ItemArrayLike<String> {\n open var value: String\n fun contains(token: String):
Boolean\n fun add(vararg tokens: String)\n fun remove(vararg tokens: String)\n fun toggle(token: String,
force: Boolean = definedExternally): Boolean\n fun replace(token: String, newToken: String)\n fun
supports(token: String): Boolean\n override fun item(index: Int):
String?\n}\n\n@Suppress(\n "INVISIBLE_REFERENCE",

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\ "INVISIBLE_MEMBER"\n@kotlin.internal.InlineOnly\npublic inline operator fun DOMTokenList.get(index:
Int): String? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DOMPointReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMPointReadOnly) to Kotlin\n */\npublic
external open class DOMPointReadOnly(x: Double, y: Double, z: Double, w: Double) {\n open val x: Double\n
open val y: Double\n open val z: Double\n open val w: Double\n fun matrixTransform(matrix:
DOMMatrixReadOnly): DOMPoint\n}\n\n/**\n * Exposes the JavaScript
[DOMPoint](https://developer.mozilla.org/en/docs/Web/API/DOMPoint) to Kotlin\n */\npublic external open class
DOMPoint : DOMPointReadOnly {\n constructor(point: DOMPointInit)\n constructor(x: Double =
definedExternally, y: Double = definedExternally, z: Double = definedExternally, w: Double = definedExternally)\n
override var x: Double\n override var y: Double\n override var z: Double\n override var w:
Double\n}\n\n/**\n
* Exposes the JavaScript [DOMPointInit](https://developer.mozilla.org/en/docs/Web/API/DOMPointInit) to
Kotlin\n */\npublic external interface DOMPointInit {\n var x: Double? /* = 0.0 */\n get() =
definedExternally\n set(value) = definedExternally\n var y: Double? /* = 0.0 */\n get() =
definedExternally\n set(value) = definedExternally\n var z: Double? /* = 0.0 */\n get() =
definedExternally\n set(value) = definedExternally\n var w: Double? /* = 1.0 */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER"\n)\n@kotlin.internal.InlineOnly\npublic inline fun DOMPointInit(x: Double? = 0.0, y:
Double? = 0.0, z: Double? = 0.0, w: Double? = 1.0): DOMPointInit {\n val o = js(\ "{ }")\n o["x"] = x\n
o["y"] = y\n o["z"] = z\n o["w"] = w\n return o\n}\n\n/**\n * Exposes the JavaScript
[DOMRect](https://developer.mozilla.org/en/docs/Web/API/DOMRect)
to Kotlin\n */\npublic external open class DOMRect(x: Double = definedExternally, y: Double = definedExternally,
width: Double = definedExternally, height: Double = definedExternally) : DOMRectReadOnly {\n override var x:
Double\n override var y: Double\n override var width: Double\n override var height: Double\n}\n\n/**\n
* Exposes the JavaScript [DOMRectReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMRectReadOnly)
to Kotlin\n */\npublic external open class DOMRectReadOnly(x: Double, y: Double, width: Double, height:
Double) {\n open val x: Double\n open val y: Double\n open val width: Double\n open val height: Double\n
open val top: Double\n open val right: Double\n open val bottom: Double\n open val left: Double\n}\n\npublic
external interface DOMRectInit {\n var x: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n var y: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n var width: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n var height: Double? /* = 0.0 */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER"\n)\n@kotlin.internal.InlineOnly\npublic inline fun DOMRectInit(x: Double? = 0.0, y:
Double? = 0.0, width: Double? = 0.0, height: Double? = 0.0): DOMRectInit {\n val o = js(\ "{ }")\n o["x"] =
x\n o["y"] = y\n o["width"] = width\n o["height"] = height\n return o\n}\n\npublic external interface
DOMRectList : ItemArrayLike<DOMRect> {\n override fun item(index: Int):
DOMRect?\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER"\n)\n@kotlin.internal.InlineOnly\npublic inline operator fun DOMRectList.get(index: Int):
DOMRect? = asDynamic()[index]\n\n/**\n * Exposes the JavaScript
[DOMQuad](https://developer.mozilla.org/en/docs/Web/API/DOMQuad)
to Kotlin\n */\npublic external open class DOMQuad {\n constructor(p1: DOMPointInit = definedExternally, p2:
DOMPointInit = definedExternally, p3: DOMPointInit = definedExternally, p4: DOMPointInit =
definedExternally)\n constructor(rect: DOMRectInit)\n open val p1: DOMPoint\n open val p2: DOMPoint\n
open val p3: DOMPoint\n open val p4: DOMPoint\n open val bounds: DOMRectReadOnly\n}\n\n/**\n
* Exposes the JavaScript
[DOMMatrixReadOnly](https://developer.mozilla.org/en/docs/Web/API/DOMMatrixReadOnly) to Kotlin\n
*/\npublic external open class DOMMatrixReadOnly(numberSequence: Array<Double>) {\n open val a: Double\n

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open val b: Double\n open val c: Double\n open val d: Double\n open val e: Double\n open val f: Double\n
open val m11: Double\n open val m12: Double\n open val m13: Double\n open val m14: Double\n open val
m21: Double\n open val m22: Double\n open val m23: Double\n open val m24: Double\n open val m31:
Double\n open val m32: Double\n open val m33: Double\n open val m34: Double\n open val m41: Double\n
open val m42: Double\n open val m43: Double\n open val m44: Double\n open val is2D: Boolean\n open
val isIdentity: Boolean\n fun translate(tx: Double, ty: Double, tz: Double = definedExternally): DOMMatrix\n
fun scale(scale: Double, originX: Double = definedExternally, originY: Double = definedExternally): DOMMatrix\n
fun scale3d(scale: Double, originX: Double = definedExternally, originY: Double = definedExternally, originZ:
Double = definedExternally): DOMMatrix\n fun scaleNonUniform(scaleX: Double, scaleY: Double =
definedExternally, scaleZ: Double = definedExternally, originX: Double = definedExternally, originY: Double =
definedExternally, originZ: Double = definedExternally): DOMMatrix\n fun rotate(angle: Double, originX:
Double = definedExternally, originY: Double = definedExternally): DOMMatrix\n fun rotateFromVector(x:
Double, y: Double):
DOMMatrix\n fun rotateAxisAngle(x: Double, y: Double, z: Double, angle: Double): DOMMatrix\n fun
skewX(sx: Double): DOMMatrix\n fun skewY(sy: Double): DOMMatrix\n fun multiply(other: DOMMatrix):
DOMMatrix\n fun flipX(): DOMMatrix\n fun flipY(): DOMMatrix\n fun inverse(): DOMMatrix\n fun
transformPoint(point: DOMPointInit = definedExternally): DOMPoint\n fun toFloat32Array(): Float32Array\n
fun toFloat64Array(): Float64Array\n}\n\n**\n * Exposes the JavaScript
[DOMMatrix](https://developer.mozilla.org/en/docs/Web/API/DOMMatrix) to Kotlin\n *\npublic external open
class DOMMatrix() : DOMMatrixReadOnly {\n constructor(transformList: String)\n constructor(other:
DOMMatrixReadOnly)\n constructor(array32: Float32Array)\n constructor(array64: Float64Array)\n
constructor(numberSequence: Array<Double>)\n override var a: Double\n override var b: Double\n override
var c: Double\n override var d: Double\n override var e: Double\n
override var f: Double\n override var m11: Double\n override var m12: Double\n override var m13:
Double\n override var m14: Double\n override var m21: Double\n override var m22: Double\n override var
m23: Double\n override var m24: Double\n override var m31: Double\n override var m32: Double\n override
var m33: Double\n override var m34: Double\n override var m41: Double\n override var m42: Double\n
override var m43: Double\n override var m44: Double\n fun multiplySelf(other: DOMMatrix): DOMMatrix\n
fun preMultiplySelf(other: DOMMatrix): DOMMatrix\n fun translateSelf(tx: Double, ty: Double, tz: Double =
definedExternally): DOMMatrix\n fun scaleSelf(scale: Double, originX: Double = definedExternally, originY:
Double = definedExternally): DOMMatrix\n fun scale3dSelf(scale: Double, originX: Double = definedExternally,
originY: Double = definedExternally, originZ: Double = definedExternally): DOMMatrix\n fun
scaleNonUniformSelf(scaleX:
Double, scaleY: Double = definedExternally, scaleZ: Double = definedExternally, originX: Double =
definedExternally, originY: Double = definedExternally, originZ: Double = definedExternally): DOMMatrix\n fun
rotateSelf(angle: Double, originX: Double = definedExternally, originY: Double = definedExternally):
DOMMatrix\n fun rotateFromVectorSelf(x: Double, y: Double): DOMMatrix\n fun rotateAxisAngleSelf(x:
Double, y: Double, z: Double, angle: Double): DOMMatrix\n fun skewXSelf(sx: Double): DOMMatrix\n fun
skewYSelf(sy: Double): DOMMatrix\n fun invertSelf(): DOMMatrix\n fun setMatrixValue(transformList:
String): DOMMatrix\n}\n\npublic external interface ScrollOptions {\n var behavior: ScrollBehavior? /* =
ScrollBehavior.AUTO */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollOptions(behavior:
ScrollBehavior?
= ScrollBehavior.AUTO): ScrollOptions {\n val o = js(\"({})\")\n o[\"behavior\"] = behavior\n return
o\n}\n\n**\n * Exposes the JavaScript
[ScrollToOptions](https://developer.mozilla.org/en/docs/Web/API/ScrollToOptions) to Kotlin\n *\npublic external
interface ScrollToOptions : ScrollOptions {\n var left: Double?\n get() = definedExternally\n set(value) =

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definedExternally\n var top: Double?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollToOptions(left: Double? =
undefined, top: Double? = undefined, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollToOptions {\n
val o = js(\"({})\")\n o[\"left\"] = left\n o[\"top\"] = top\n o[\"behavior\"] = behavior\n return o\n}\n\n/**\n * Exposes the JavaScript [MediaQueryList](https://developer.mozilla.org/en/docs/Web/API/MediaQueryList) to
Kotlin\n */\npublic
external abstract class MediaQueryList : EventTarget {\n open val media: String\n open val matches: Boolean\n
 open var onchange: ((Event) -> dynamic)?\n fun addListener(listener: EventListener?)\n fun
addListener(listener: ((Event) -> Unit)?)\n fun removeListener(listener: EventListener?)\n fun
removeListener(listener: ((Event) -> Unit)?)\n}\n\n/**\n * Exposes the JavaScript
[MediaQueryListEvent](https://developer.mozilla.org/en/docs/Web/API/MediaQueryListEvent) to Kotlin\n
*/\npublic external open class MediaQueryListEvent(type: String, eventInitDict: MediaQueryListEventInit =
definedExternally) : Event {\n open val media: String\n open val matches: Boolean\n\n companion object {\n
 val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface MediaQueryListEventInit : EventInit {\n var
media: String? /* = \"\" */\n get() = definedExternally\n
 set(value) = definedExternally\n var matches: Boolean? /* = false */\n get() = definedExternally\n
 set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaQueryListEventInit(media:
String? = \"\", matches: Boolean? = false, bubbles: Boolean? = false, cancelable: Boolean? = false, composed:
Boolean? = false): MediaQueryListEventInit {\n val o = js(\"({})\")\n o[\"media\"] = media\n o[\"matches\"] =
matches\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] = composed\n return
o\n}\n\n/**\n * Exposes the JavaScript [Screen](https://developer.mozilla.org/en/docs/Web/API/Screen) to Kotlin\n
*/\npublic external abstract class Screen {\n open val availWidth: Int\n open val availHeight: Int\n open val
width: Int\n open val height: Int\n open val colorDepth: Int\n open val pixelDepth: Int\n}\n\n/**\n * Exposes
the
JavaScript [CaretPosition](https://developer.mozilla.org/en/docs/Web/API/CaretPosition) to Kotlin\n */\npublic
external abstract class CaretPosition {\n open val offsetNode: Node\n open val offset: Int\n fun
getClientRect(): DOMRect?\n}\n\npublic external interface ScrollIntoViewOptions : ScrollOptions {\n var block:
ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */\n get() = definedExternally\n set(value) =
definedExternally\n var inline: ScrollLogicalPosition? /* = ScrollLogicalPosition.CENTER */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ScrollIntoViewOptions(block:
ScrollLogicalPosition? = ScrollLogicalPosition.CENTER, inline: ScrollLogicalPosition? =
ScrollLogicalPosition.CENTER, behavior: ScrollBehavior? = ScrollBehavior.AUTO): ScrollIntoViewOptions {\n
val o = js(\"({})\")\n o[\"block\"] = block\n
 o[\"inline\"] = inline\n o[\"behavior\"] = behavior\n return o\n}\n\npublic external interface BoxQuadOptions
{\n var box: CSSBoxType? /* = CSSBoxType.BORDER */\n get() = definedExternally\n set(value) =
definedExternally\n var relativeTo: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun BoxQuadOptions(box: CSSBoxType?
= CSSBoxType.BORDER, relativeTo: dynamic = undefined): BoxQuadOptions {\n val o = js(\"({})\")\n
 o[\"box\"] = box\n o[\"relativeTo\"] = relativeTo\n return o\n}\n\npublic external interface
ConvertCoordinateOptions {\n var fromBox: CSSBoxType? /* = CSSBoxType.BORDER */\n get() =
definedExternally\n set(value) = definedExternally\n var toBox: CSSBoxType? /* = CSSBoxType.BORDER
*/\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",

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\ "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ConvertCoordinateOptions(fromBox:
CSSBoxType? = CSSBoxType.BORDER, toBox: CSSBoxType? = CSSBoxType.BORDER):
ConvertCoordinateOptions { \n val o = js("{})")\n o["fromBox"] = fromBox\n o["toBox"] = toBox\n
return o}\n\n/**\n * Exposes the JavaScript
[GeometryUtils](https://developer.mozilla.org/en/docs/Web/API/GeometryUtils) to Kotlin\n *\npublic external
interface GeometryUtils { \n fun getBoxQuads(options: BoxQuadOptions = definedExternally):
Array<DOMQuad>\n fun convertQuadFromNode(quad: dynamic, from: dynamic, options:
ConvertCoordinateOptions = definedExternally): DOMQuad\n fun convertRectFromNode(rect:
DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions = definedExternally): DOMQuad\n fun
convertPointFromNode(point: DOMPointInit, from: dynamic, options: ConvertCoordinateOptions =
definedExternally): DOMPoint}\n\n/**\n * Exposes the JavaScript
[Touch](https://developer.mozilla.org/en/docs/Web/API/Touch) to Kotlin\n *\npublic external abstract class Touch
{\n open val identifier: Int\n open val target: EventTarget\n open val screenX: Int\n open val screenY: Int\n
open val clientX: Int\n open val clientY: Int\n open val pageX: Int\n open val pageY: Int\n open val region:
String?\n}\n\npublic external abstract class TouchList : ItemArrayLike<Touch> {\n override fun item(index: Int):
Touch?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun TouchList.get(index: Int):
Touch? = asDynamic()[index]\n\npublic external open class TouchEvent : UIEvent {\n open val touches:
TouchList\n open val targetTouches: TouchList\n open val changedTouches: TouchList\n open val altKey:
Boolean\n open val metaKey: Boolean\n open val ctrlKey: Boolean\n open val shiftKey: Boolean\n\n
companion object {\n val NONE:
Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE:
Short\n }\n}\n\n/**\n * Exposes the JavaScript [Image](https://developer.mozilla.org/en/docs/Web/API/Image) to
Kotlin\n *\npublic external open class Image(width: Int = definedExternally, height: Int = definedExternally) :
HTMLImageElement {\n override var onabort: ((Event) -> dynamic)?\n override var onblur: ((FocusEvent) ->
dynamic)?\n override var oncancel: ((Event) -> dynamic)?\n override var oncanplay: ((Event) -> dynamic)?\n
override var oncanplaythrough: ((Event) -> dynamic)?\n override var onchange: ((Event) -> dynamic)?\n
override var onclick: ((MouseEvent) -> dynamic)?\n override var onclose: ((Event) -> dynamic)?\n override var
oncontextmenu: ((MouseEvent) -> dynamic)?\n override var oncuechange: ((Event) -> dynamic)?\n override var
ondblclick: ((MouseEvent) -> dynamic)?\n override var ondrag: ((DragEvent) -> dynamic)?\n override var
ondragend: ((DragEvent) -> dynamic)?\n override var ondragenter: ((DragEvent) -> dynamic)?\n override var
ondragexit: ((DragEvent) -> dynamic)?\n override var ondragleave: ((DragEvent) -> dynamic)?\n override var
ondragover: ((DragEvent) -> dynamic)?\n override var ondragstart: ((DragEvent) -> dynamic)?\n override var
ondrop: ((DragEvent) -> dynamic)?\n override var ondurationchange: ((Event) -> dynamic)?\n override var
onemptied: ((Event) -> dynamic)?\n override var onended: ((Event) -> dynamic)?\n override var onerror:
((dynamic, String, Int, Int, Any?) -> dynamic)?\n override var onfocus: ((FocusEvent) -> dynamic)?\n override
var oninput: ((InputEvent) -> dynamic)?\n override var oninvalid: ((Event) -> dynamic)?\n override var
onkeydown: ((KeyboardEvent) -> dynamic)?\n override var onkeypress: ((KeyboardEvent) -> dynamic)?\n
override var onkeyup: ((KeyboardEvent) -> dynamic)?\n override var onload: ((Event) -> dynamic)?\n override
var onloadeddata: ((Event) -> dynamic)?\n override var onloadedmetadata: ((Event) -> dynamic)?\n override
var onloadend: ((Event) -> dynamic)?\n override var onloadstart: ((ProgressEvent) -> dynamic)?\n override var
onmousedown: ((MouseEvent) -> dynamic)?\n override var onmouseenter: ((MouseEvent) -> dynamic)?\n
override var onmouseleave: ((MouseEvent) -> dynamic)?\n override var onmousemove: ((MouseEvent) ->
dynamic)?\n override var onmouseout: ((MouseEvent) -> dynamic)?\n override var onmouseover:
((MouseEvent) -> dynamic)?\n override var onmouseup: ((MouseEvent) -> dynamic)?\n override var onwheel:
((WheelEvent) -> dynamic)?\n override var onpause: ((Event) -> dynamic)?\n override var onplay: ((Event) ->
dynamic)?\n override var onplaying: ((Event) -> dynamic)?\n override var onprogress: ((ProgressEvent) ->
dynamic)?\n override var onratechange: ((Event) -> dynamic)?\n override var onreset: ((Event) -> dynamic)?\n

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override var
onresize: ((Event) -> dynamic)?\n override var onscroll: ((Event) -> dynamic)?\n override var onseeked:
((Event) -> dynamic)?\n override var onseeking: ((Event) -> dynamic)?\n override var onselect: ((Event) ->
dynamic)?\n override var onshow: ((Event) -> dynamic)?\n override var onstalled: ((Event) -> dynamic)?\n
override var onsubmit: ((Event) -> dynamic)?\n override var onsuspend: ((Event) -> dynamic)?\n override var
ontimeupdate: ((Event) -> dynamic)?\n override var ontoggle: ((Event) -> dynamic)?\n override var
onvolumechange: ((Event) -> dynamic)?\n override var onwaiting: ((Event) -> dynamic)?\n override var
ongotpointercapture: ((PointerEvent) -> dynamic)?\n override var onlostpointercapture: ((PointerEvent) ->
dynamic)?\n override var onpointerdown: ((PointerEvent) -> dynamic)?\n override var onpointermove:
((PointerEvent) -> dynamic)?\n override var onpointerup: ((PointerEvent) -> dynamic)?\n override var
onpointercancel:
((PointerEvent) -> dynamic)?\n override var onpointerover: ((PointerEvent) -> dynamic)?\n override var
onpointerout: ((PointerEvent) -> dynamic)?\n override var onpointerenter: ((PointerEvent) -> dynamic)?\n
override var onpointerleave: ((PointerEvent) -> dynamic)?\n override var oncopy: ((ClipboardEvent) ->
dynamic)?\n override var oncut: ((ClipboardEvent) -> dynamic)?\n override var onpaste: ((ClipboardEvent) ->
dynamic)?\n override var contentEditable: String\n override val isContentEditable: Boolean\n override val
style: CSSStyleDeclaration\n override val children: HTMLCollection\n override val firstElementChild:
Element?\n override val lastElementChild: Element?\n override val childElementCount: Int\n override val
previousElementSibling: Element?\n override val nextElementSibling: Element?\n override val assignedSlot:
HTMLSlotElement?\n override fun prepend(vararg nodes: dynamic)\n override fun append(vararg nodes:
dynamic)\n
 override fun querySelector(selectors: String): Element?\n override fun querySelectorAll(selectors: String):
NodeList\n override fun before(vararg nodes: dynamic)\n override fun after(vararg nodes: dynamic)\n override
fun replaceWith(vararg nodes: dynamic)\n override fun remove()\n override fun getBoxQuads(options:
BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n override fun convertQuadFromNode(quad:
dynamic, from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n override
fun convertRectFromNode(rect: DOMRectReadOnly, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n override fun convertPointFromNode(point: DOMPointInit, from: dynamic,
options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val
DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val
DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\n public external open class
Audio(src: String = definedExternally) : HTMLAudioElement {\n override var onabort: ((Event) -> dynamic)?\n
override var onblur: ((FocusEvent) -> dynamic)?\n override var oncancel: ((Event) -> dynamic)?\n override var
oncanplay: ((Event) -> dynamic)?\n override var oncanplaythrough: ((Event) -> dynamic)?\n override var
onchange: ((Event)
-> dynamic)?\n override var onclick: ((MouseEvent) -> dynamic)?\n override var onclose: ((Event) ->
dynamic)?\n override var oncontextmenu: ((MouseEvent) -> dynamic)?\n override var oncuechange: ((Event) ->
dynamic)?\n override var ondblclick: ((MouseEvent) -> dynamic)?\n override var ondrag: ((DragEvent) ->
dynamic)?\n override var ondragend: ((DragEvent) -> dynamic)?\n override var ondragenter: ((DragEvent) ->
dynamic)?\n override var ondragexit: ((DragEvent) -> dynamic)?\n override var ondragleave: ((DragEvent) ->

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dynamic)?\n override var ondragover: ((DragEvent) -> dynamic)?\n override var ondragstart: ((DragEvent) ->
dynamic)?\n override var ondrop: ((DragEvent) -> dynamic)?\n override var ondurationchange: ((Event) ->
dynamic)?\n override var onemptied: ((Event) -> dynamic)?\n override var onended: ((Event) -> dynamic)?\n
override var onerror: ((dynamic, String, Int, Int, Any?) -> dynamic)?\n override var onfocus: ((FocusEvent)
-> dynamic)?\n override var oninput: ((InputEvent) -> dynamic)?\n override var oninvalid: ((Event) ->
dynamic)?\n override var onkeydown: ((KeyboardEvent) -> dynamic)?\n override var onkeypress:
((KeyboardEvent) -> dynamic)?\n override var onkeyup: ((KeyboardEvent) -> dynamic)?\n override var onload:
((Event) -> dynamic)?\n override var onloadeddata: ((Event) -> dynamic)?\n override var onloadedmetadata:
((Event) -> dynamic)?\n override var onloadend: ((Event) -> dynamic)?\n override var onloadstart:
((ProgressEvent) -> dynamic)?\n override var onmousedown: ((MouseEvent) -> dynamic)?\n override var
onmouseenter: ((MouseEvent) -> dynamic)?\n override var onmouseleave: ((MouseEvent) -> dynamic)?\n
override var onmousemove: ((MouseEvent) -> dynamic)?\n override var onmouseout: ((MouseEvent) ->
dynamic)?\n override var onmouseover: ((MouseEvent) -> dynamic)?\n override var onmouseup: ((MouseEvent)
-> dynamic)?\n override var onwheel:
((WheelEvent) -> dynamic)?\n override var onpause: ((Event) -> dynamic)?\n override var onplay: ((Event) ->
dynamic)?\n override var onplaying: ((Event) -> dynamic)?\n override var onprogress: ((ProgressEvent) ->
dynamic)?\n override var onratechange: ((Event) -> dynamic)?\n override var onreset: ((Event) -> dynamic)?\n
override var onresize: ((Event) -> dynamic)?\n override var onscroll: ((Event) -> dynamic)?\n override var
onseeked: ((Event) -> dynamic)?\n override var onseeking: ((Event) -> dynamic)?\n override var onselect:
((Event) -> dynamic)?\n override var onshow: ((Event) -> dynamic)?\n override var onstalled: ((Event) ->
dynamic)?\n override var onsubmit: ((Event) -> dynamic)?\n override var onsuspend: ((Event) -> dynamic)?\n
override var ontimeupdate: ((Event) -> dynamic)?\n override var ontoggle: ((Event) -> dynamic)?\n override var
onvolumechange: ((Event) -> dynamic)?\n override var onwaiting: ((Event) -> dynamic)?\n
 override var ongotpointercapture: ((PointerEvent) -> dynamic)?\n override var onlostpointercapture:
((PointerEvent) -> dynamic)?\n override var onpointerdown: ((PointerEvent) -> dynamic)?\n override var
onpointermove: ((PointerEvent) -> dynamic)?\n override var onpointerup: ((PointerEvent) -> dynamic)?\n
override var onpointercancel: ((PointerEvent) -> dynamic)?\n override var onpointerover: ((PointerEvent) ->
dynamic)?\n override var onpointerout: ((PointerEvent) -> dynamic)?\n override var onpointerenter:
((PointerEvent) -> dynamic)?\n override var onpointerleave: ((PointerEvent) -> dynamic)?\n override var
oncopy: ((ClipboardEvent) -> dynamic)?\n override var oncut: ((ClipboardEvent) -> dynamic)?\n override var
onpaste: ((ClipboardEvent) -> dynamic)?\n override var contentEditable: String\n override val
isContentEditable: Boolean\n override val style: CSSStyleDeclaration\n override val children:
HTMLCollection\n override val
 firstElementChild: Element?\n override val lastElementChild: Element?\n override val childElementCount:
Int\n override val previousElementSibling: Element?\n override val nextElementSibling: Element?\n override
val assignedSlot: HTMLSlotElement?\n override fun prepend(vararg nodes: dynamic)\n override fun
append(vararg nodes: dynamic)\n override fun querySelector(selectors: String): Element?\n override fun
querySelectorAll(selectors: String): NodeList\n override fun before(vararg nodes: dynamic)\n override fun
after(vararg nodes: dynamic)\n override fun replaceWith(vararg nodes: dynamic)\n override fun remove()\n
override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n override
fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions
/* = definedExternally */): DOMQuad\n override fun convertPointFromNode(point: DOMPointInit, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n companion object {\n
val NETWORK_EMPTY: Short\n val NETWORK_IDLE: Short\n val NETWORK_LOADING: Short\n
val NETWORK_NO_SOURCE: Short\n val HAVE_NOTHING: Short\n val HAVE_METADATA:
Short\n val HAVE_CURRENT_DATA: Short\n val HAVE_FUTURE_DATA: Short\n val

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((PointerEvent) -> dynamic)?\n override var onpointerdown: ((PointerEvent) -> dynamic)?\n override var
onpointermove: ((PointerEvent) -> dynamic)?\n override var onpointerup: ((PointerEvent) -> dynamic)?\n
override var onpointercancel: ((PointerEvent) -> dynamic)?\n override var onpointerover: ((PointerEvent) ->
dynamic)?\n override var onpointerout: ((PointerEvent) -> dynamic)?\n override var onpointerenter:
((PointerEvent) -> dynamic)?\n override var onpointerleave: ((PointerEvent) -> dynamic)?\n override var
oncopy: ((ClipboardEvent) -> dynamic)?\n override var oncut: ((ClipboardEvent) -> dynamic)?\n override var
onpaste: ((ClipboardEvent) -> dynamic)?\n override var contentEditable: String\n override val
isContentEditable: Boolean\n override val style: CSSStyleDeclaration\n override val children:
HTMLCollection\n override val firstElementChild: Element?\n override val lastElementChild: Element?\n
override val
childElementCount: Int\n override val previousElementSibling: Element?\n override val nextElementSibling:
Element?\n override val assignedSlot: HTMLSlotElement?\n override fun prepend(vararg nodes: dynamic)\n
override fun append(vararg nodes: dynamic)\n override fun querySelector(selectors: String): Element?\n
override fun querySelectorAll(selectors: String): NodeList\n override fun before(vararg nodes: dynamic)\n
override fun after(vararg nodes: dynamic)\n override fun replaceWith(vararg nodes: dynamic)\n override fun
remove()\n override fun getBoxQuads(options: BoxQuadOptions /* = definedExternally */): Array<DOMQuad>\n
 override fun convertQuadFromNode(quad: dynamic, from: dynamic, options: ConvertCoordinateOptions /* =
definedExternally */): DOMQuad\n override fun convertRectFromNode(rect: DOMRectReadOnly, from:
dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMQuad\n override fun
convertPointFromNode(point: DOMPointInit,
from: dynamic, options: ConvertCoordinateOptions /* = definedExternally */): DOMPoint\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n\npublic external interface
UnionElementOrHTMLCollection\n\npublic external interface UnionElementOrRadioNodeList\n\npublic
external interface UnionHTMLOptGroupElementOrHTMLOptionElement\n\n\npublic external interface
UnionAudioTrackOrTextTrackOrVideoTrack\n\n\npublic external interface UnionElementOrMouseEvent\n\n\npublic
external interface UnionMessagePortOrWindowProxy\n\n\npublic external interface MediaPlayer\n\n\npublic
external interface RenderingContext\n\n\npublic external interface HTMLOrSVGImageElement :
CanvasImageSource\n\n\npublic external interface CanvasImageSource : ImageBitmapSource\n\n\npublic external
interface ImageBitmapSource\n\n\npublic external interface HTMLOrSVGScriptElement\n\n/* please, don't
implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface DocumentReadyState {\n companion object\n}\n\npublic inline val
DocumentReadyState.Companion.LOADING: DocumentReadyState get() =
"loading".asDynamic().unsafeCast<DocumentReadyState>()\n\npublic inline val
DocumentReadyState.Companion.INTERACTIVE: DocumentReadyState get() =
"interactive".asDynamic().unsafeCast<DocumentReadyState>()\n\npublic
inline val DocumentReadyState.Companion.COMPLETE: DocumentReadyState get() =
"complete".asDynamic().unsafeCast<DocumentReadyState>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface CanPlayTypeResult {\n companion object\n}\n\npublic inline val

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CanPlayTypeResult.Companion.EMPTY: CanPlayTypeResult get() =
`\".asDynamic().unsafeCast<CanPlayTypeResult>()\n\npublic inline val CanPlayTypeResult.Companion.MAYBE:
CanPlayTypeResult get() = `\"maybe\".asDynamic().unsafeCast<CanPlayTypeResult>()\n\npublic inline val
CanPlayTypeResult.Companion.PROBABLY: CanPlayTypeResult get() =
`\"probably\".asDynamic().unsafeCast<CanPlayTypeResult>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface TextTrackMode {\n companion object\n}\n\npublic
 inline val TextTrackMode.Companion.DISABLED: TextTrackMode get() =
 `\"disabled\".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.HIDDEN: TextTrackMode get() =
 `\"hidden\".asDynamic().unsafeCast<TextTrackMode>()\n\npublic inline val
TextTrackMode.Companion.SHOWING: TextTrackMode get() =
 `\"showing\".asDynamic().unsafeCast<TextTrackMode>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface TextTrackKind {\n companion object\n}\n\npublic inline val TextTrackKind.Companion.SUBTITLES:
TextTrackKind get() = `\"subtitles\".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.CAPTIONS: TextTrackKind get() =
 `\"captions\".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.DESCRPTIONS: TextTrackKind get() =
 `\"descriptions\".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.CHAPTERS:
 TextTrackKind get() = `\"chapters\".asDynamic().unsafeCast<TextTrackKind>()\n\npublic inline val
TextTrackKind.Companion.METADATA: TextTrackKind get() =
 `\"metadata\".asDynamic().unsafeCast<TextTrackKind>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface SelectionMode {\n companion object\n}\n\npublic inline val SelectionMode.Companion.SELECT:
SelectionMode get() = `\"select\".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val
SelectionMode.Companion.START: SelectionMode get() =
 `\"start\".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val SelectionMode.Companion.END:
SelectionMode get() = `\"end\".asDynamic().unsafeCast<SelectionMode>()\n\npublic inline val
SelectionMode.Companion.PRESERVE: SelectionMode get() =
 `\"preserve\".asDynamic().unsafeCast<SelectionMode>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface CanvasFillRule {\n companion object\n}\n\npublic inline val
CanvasFillRule.Companion.NONZERO: CanvasFillRule get() =
 `\"nonzero\".asDynamic().unsafeCast<CanvasFillRule>()\n\npublic inline val
CanvasFillRule.Companion.EVENODD: CanvasFillRule get() =
 `\"evenodd\".asDynamic().unsafeCast<CanvasFillRule>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ImageSmoothingQuality {\n companion object\n}\n\npublic inline val
ImageSmoothingQuality.Companion.LOW: ImageSmoothingQuality get() =
 `\"low\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\npublic inline val
ImageSmoothingQuality.Companion.MEDIUM: ImageSmoothingQuality get() =
 `\"medium\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\npublic inline val
ImageSmoothingQuality.Companion.HIGH: ImageSmoothingQuality get() =
 `\"high\".asDynamic().unsafeCast<ImageSmoothingQuality>()\n\n/*
 please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external

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interface CanvasLineCap {\n companion object\n}\n\npublic inline val CanvasLineCap.Companion.BUTT:
CanvasLineCap get() = \"butt\".asDynamic().unsafeCast<CanvasLineCap>()\n\npublic inline val
CanvasLineCap.Companion.ROUND: CanvasLineCap get() =
\"round\".asDynamic().unsafeCast<CanvasLineCap>()\n\npublic inline val CanvasLineCap.Companion.SQUARE:
CanvasLineCap get() = \"square\".asDynamic().unsafeCast<CanvasLineCap>()\n\n/* please, don't implement this
interface! *\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface CanvasLineJoin {\n companion object\n}\n\npublic inline val
CanvasLineJoin.Companion.ROUND: CanvasLineJoin get() =
\"round\".asDynamic().unsafeCast<CanvasLineJoin>()\n\npublic inline val CanvasLineJoin.Companion.BEVEL:
CanvasLineJoin get() = \"bevel\".asDynamic().unsafeCast<CanvasLineJoin>()\n\npublic
inline val CanvasLineJoin.Companion.MITER: CanvasLineJoin get() =
\"miter\".asDynamic().unsafeCast<CanvasLineJoin>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface CanvasTextAlign {\n companion object\n}\n\npublic inline val CanvasTextAlign.Companion.START:
CanvasTextAlign get() = \"start\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.END: CanvasTextAlign get() =
\"end\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val CanvasTextAlign.Companion.LEFT:
CanvasTextAlign get() = \"left\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.RIGHT: CanvasTextAlign get() =
\"right\".asDynamic().unsafeCast<CanvasTextAlign>()\n\npublic inline val
CanvasTextAlign.Companion.CENTER: CanvasTextAlign get() =
\"center\".asDynamic().unsafeCast<CanvasTextAlign>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface CanvasTextBaseline {\n companion object\n}\n\npublic inline val CanvasTextBaseline.Companion.TOP:
CanvasTextBaseline get() = \"top\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.HANGING: CanvasTextBaseline get() =
\"hanging\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.MIDDLE: CanvasTextBaseline get() =
\"middle\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.ALPHABETIC: CanvasTextBaseline get() =
\"alphabetic\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.IDEOGRAPHIC: CanvasTextBaseline get() =
\"ideographic\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\npublic inline val
CanvasTextBaseline.Companion.BOTTOM: CanvasTextBaseline get() =
\"bottom\".asDynamic().unsafeCast<CanvasTextBaseline>()\n\n\n/*
please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface CanvasDirection {\n companion object\n}\n\npublic inline val CanvasDirection.Companion.LTR:
CanvasDirection get() = \"ltr\".asDynamic().unsafeCast<CanvasDirection>()\n\npublic inline val
CanvasDirection.Companion.RTL: CanvasDirection get() =
\"rtl\".asDynamic().unsafeCast<CanvasDirection>()\n\npublic inline val CanvasDirection.Companion.INHERIT:
CanvasDirection get() = \"inherit\".asDynamic().unsafeCast<CanvasDirection>()\n\n\n/* please, don't implement this
interface! *\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface ScrollRestoration {\n companion object\n}\n\npublic inline val
ScrollRestoration.Companion.AUTO: ScrollRestoration get() =
\"auto\".asDynamic().unsafeCast<ScrollRestoration>()\n\npublic inline val
ScrollRestoration.Companion.MANUAL: ScrollRestoration get() =
\"manual\".asDynamic().unsafeCast<ScrollRestoration>()\n\n\n/*

```

please, don't implement this interface!

```
*\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ImageOrientation {\n companion object\n}\n\npublic inline val ImageOrientation.Companion.NONE:
ImageOrientation get() = "none".asDynamic().unsafeCast<ImageOrientation>()\n\npublic inline val
ImageOrientation.Companion.FLIPY: ImageOrientation get() =
"flipY".asDynamic().unsafeCast<ImageOrientation>()\n\n/* please, don't implement this interface!
*\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface PremultiplyAlpha {\n companion object\n}\n\npublic inline val PremultiplyAlpha.Companion.NONE:
PremultiplyAlpha get() = "none".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.PREMULTIPLY: PremultiplyAlpha get() =
"premultiply".asDynamic().unsafeCast<PremultiplyAlpha>()\n\npublic inline val
PremultiplyAlpha.Companion.DEFAULT:
PremultiplyAlpha get() = "default".asDynamic().unsafeCast<PremultiplyAlpha>()\n\n/* please, don't implement
this interface! *\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic
external interface ColorSpaceConversion {\n companion object\n}\n\npublic inline val
ColorSpaceConversion.Companion.NONE: ColorSpaceConversion get() =
"none".asDynamic().unsafeCast<ColorSpaceConversion>()\n\npublic inline val
ColorSpaceConversion.Companion.DEFAULT: ColorSpaceConversion get() =
"default".asDynamic().unsafeCast<ColorSpaceConversion>()\n\n/* please, don't implement this interface!
*\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ResizeQuality {\n companion object\n}\n\npublic inline val ResizeQuality.Companion.PIXELATED:
ResizeQuality get() = "pixelated".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val
ResizeQuality.Companion.LOW: ResizeQuality get() =
"low".asDynamic().unsafeCast<ResizeQuality>()\n\npublic
inline val ResizeQuality.Companion.MEDIUM: ResizeQuality get() =
"medium".asDynamic().unsafeCast<ResizeQuality>()\n\npublic inline val ResizeQuality.Companion.HIGH:
ResizeQuality get() = "high".asDynamic().unsafeCast<ResizeQuality>()\n\n/* please, don't implement this
interface! *\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic
external interface BinaryType {\n companion object\n}\n\npublic inline val BinaryType.Companion.BLOB:
BinaryType get() = "blob".asDynamic().unsafeCast<BinaryType>()\n\npublic inline val
BinaryType.Companion.ARRAYBUFFER: BinaryType get() =
"arraybuffer".asDynamic().unsafeCast<BinaryType>()\n\n/* please, don't implement this interface!
*\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface WorkerType {\n companion object\n}\n\npublic inline val WorkerType.Companion.CLASSIC:
WorkerType get() = "classic".asDynamic().unsafeCast<WorkerType>()\n\npublic
inline val WorkerType.Companion.MODULE: WorkerType get() =
"module".asDynamic().unsafeCast<WorkerType>()\n\n/* please, don't implement this interface!
*\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ShadowRootMode {\n companion object\n}\n\npublic inline val ShadowRootMode.Companion.OPEN:
ShadowRootMode get() = "open".asDynamic().unsafeCast<ShadowRootMode>()\n\npublic inline val
ShadowRootMode.Companion.CLOSED: ShadowRootMode get() =
"closed".asDynamic().unsafeCast<ShadowRootMode>()\n\n/* please, don't implement this interface!
*\n@jsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ScrollBehavior {\n companion object\n}\n\npublic inline val ScrollBehavior.Companion.AUTO:
ScrollBehavior get() = "auto".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic inline val
ScrollBehavior.Companion.INSTANT: ScrollBehavior get() =
"instant".asDynamic().unsafeCast<ScrollBehavior>()\n\npublic
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inline val ScrollBehavior.Companion.SMOOTH: ScrollBehavior get() =
 \"smooth\".asDynamic().unsafeCast<ScrollBehavior>()\n\n/* please, don't implement this interface!
 *\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface ScrollLogicalPosition {\n companion object\n}\n\npublic inline val
ScrollLogicalPosition.Companion.START: ScrollLogicalPosition get() =
 \"start\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.CENTER: ScrollLogicalPosition get() =
 \"center\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.END: ScrollLogicalPosition get() =
 \"end\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\npublic inline val
ScrollLogicalPosition.Companion.NEAREST: ScrollLogicalPosition get() =
 \"nearest\".asDynamic().unsafeCast<ScrollLogicalPosition>()\n\n/* please, don't implement this interface!
 *\n\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic
external interface CSSBoxType {\n companion object\n}\n\npublic inline val
CSSBoxType.Companion.MARGIN: CSSBoxType get() =
 \"margin\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val CSSBoxType.Companion.BORDER:
CSSBoxType get() = \"border\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val
CSSBoxType.Companion.PADDING: CSSBoxType get() =
 \"padding\".asDynamic().unsafeCast<CSSBoxType>()\n\npublic inline val CSSBoxType.Companion.CONTENT:
CSSBoxType get() = \"content\".asDynamic().unsafeCast<CSSBoxType>()\", \"/*\n * Copyright 2010-2021 JetBrains
s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED,
DO NOT EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.fetch\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.files.*\nimport
org.w3c.xhr.*\n\n/**\n * Exposes the JavaScript
[Headers](https://developer.mozilla.org/en/docs/Web/API/Headers) to Kotlin\n *\n\npublic external open class
Headers(init: dynamic = definedExternally) {\n fun append(name: String, value: String)\n fun delete(name:
String)\n fun get(name: String): String?\n fun has(name: String): Boolean\n fun set(name: String, value:
String)\n}\n\n/**\n * Exposes the JavaScript [Body](https://developer.mozilla.org/en/docs/Web/API/Body) to
Kotlin\n *\n\npublic external interface Body {\n val bodyUsed: Boolean\n fun arrayBuffer():
Promise<ArrayBuffer>\n fun blob(): Promise<Blob>\n fun formData(): Promise<FormData>\n fun json():
Promise<Any?>\n fun text(): Promise<String>\n}\n\n/**\n * Exposes the JavaScript
[Request](https://developer.mozilla.org/en/docs/Web/API/Request) to Kotlin\n *\n\npublic external open class
Request(input: dynamic, init: RequestInit = definedExternally) : Body {\n open val method: String\n open val
url: String\n open val headers: Headers\n open val type: RequestType\n open val destination:
RequestDestination\n open val referrer: String\n open val referrerPolicy: dynamic\n open val mode:
RequestMode\n open val credentials: RequestCredentials\n open val cache: RequestCache\n open val redirect:
RequestRedirect\n open val integrity: String\n open val keepalive: Boolean\n override val bodyUsed:
Boolean\n fun clone(): Request\n override fun arrayBuffer(): Promise<ArrayBuffer>\n override fun blob():
Promise<Blob>\n override fun formData(): Promise<FormData>\n override fun json(): Promise<Any?>\n override
fun text(): Promise<String>\n}\n\npublic external interface RequestInit {\n var method: String?\n get() =
definedExternally\n set(value) = definedExternally\n var headers: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var body: dynamic\n get() = definedExternally\n
 set(value) = definedExternally\n var referrer: String?\n get() = definedExternally\n set(value) =
definedExternally\n var referrerPolicy: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var mode: RequestMode?\n get() = definedExternally\n set(value) =
definedExternally\n var credentials: RequestCredentials?\n get() = definedExternally\n set(value) =
definedExternally\n var cache: RequestCache?\n get() = definedExternally\n set(value) =

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definedExternally\n var redirect: RequestRedirect?\n get() = definedExternally\n set(value) =
definedExternally\n var integrity: String?\n get() = definedExternally\n set(value) = definedExternally\n
var keepalive: Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var window:
Any?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun RequestInit(method: String? =
undefined, headers: dynamic = undefined, body: dynamic = undefined, referrer: String? = undefined, referrerPolicy:
dynamic = undefined, mode: RequestMode? = undefined, credentials: RequestCredentials? = undefined, cache:
RequestCache? = undefined, redirect: RequestRedirect? = undefined, integrity: String? = undefined, keepalive:
Boolean? = undefined, window: Any? = undefined): RequestInit {\n val o = js(\"({})\")\n o[\"method\"] =
method\n o[\"headers\"] = headers\n o[\"body\"] = body\n o[\"referrer\"] = referrer\n o[\"referrerPolicy\"] =
referrerPolicy\n o[\"mode\"] = mode\n o[\"credentials\"] = credentials\n o[\"cache\"] = cache\n o[\"redirect\"]
= redirect\n o[\"integrity\"] = integrity\n o[\"keepalive\"] = keepalive\n o[\"window\"] = window\n return
o\n}\n\n/**\n * Exposes the JavaScript [Response](https://developer.mozilla.org/en/docs/Web/API/Response)
to Kotlin\n */\npublic external open class Response(body: dynamic = definedExternally, init: ResponseInit =
definedExternally) : Body {\n open val type: ResponseType\n open val url: String\n open val redirected:
Boolean\n open val status: Short\n open val ok: Boolean\n open val statusText: String\n open val headers:
Headers\n open val body: dynamic\n open val trailer: Promise<Headers>\n override val bodyUsed: Boolean\n
fun clone(): Response\n override fun arrayBuffer(): Promise<ArrayBuffer>\n override fun blob():
Promise<Blob>\n override fun formData(): Promise<FormData>\n override fun json(): Promise<Any?>\n
override fun text(): Promise<String>\n\n companion object {\n fun error(): Response\n fun redirect(url:
String, status: Short = definedExternally): Response\n }\n}\n\npublic external interface ResponseInit {\n var
status: Short? /* = 200 */\n get() = definedExternally\n set(value) = definedExternally\n var statusText: String? /* = \"OK\" */\n get() = definedExternally\n set(value) = definedExternally\n var headers: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ResponseInit(status: Short? = 200,
statusText: String? = \"OK\", headers: dynamic = undefined): ResponseInit {\n val o = js(\"({})\")\n o[\"status\"]
= status\n o[\"statusText\"] = statusText\n o[\"headers\"] = headers\n return o\n}\n\n/* please, don't implement
this interface! */\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface RequestType {\n companion object\n}\n\npublic inline val RequestType.Companion.EMPTY:
RequestType get() = \"\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.AUDIO: RequestType get() =
\"audio\".asDynamic().unsafeCast<RequestType>()\n\npublic
inline val RequestType.Companion.FONT: RequestType get() =
\"font\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.IMAGE:
RequestType get() = \"image\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.SCRIPT: RequestType get() =
\"script\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.STYLE:
RequestType get() = \"style\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val
RequestType.Companion.TRACK: RequestType get() =
\"track\".asDynamic().unsafeCast<RequestType>()\n\npublic inline val RequestType.Companion.VIDEO:
RequestType get() = \"video\".asDynamic().unsafeCast<RequestType>()\n\n/* please, don't implement this
interface! */\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface RequestDestination {\n companion object\n}\n\npublic inline val
RequestDestination.Companion.EMPTY: RequestDestination
get() = \"\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.DOCUMENT: RequestDestination get() =

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\"document\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.EMBED: RequestDestination get() =
\"embed\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.FONT: RequestDestination get() =
\"font\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.IMAGE: RequestDestination get() =
\"image\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.MANIFEST: RequestDestination get() =
\"manifest\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.MEDIA: RequestDestination get() =
\"media\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.OBJECT: RequestDestination get()
= \"object\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.REPORT: RequestDestination get() =
\"report\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SCRIPT: RequestDestination get() =
\"script\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SERVICEWORKER: RequestDestination get() =
\"serviceworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.SHAREDWORKER: RequestDestination get() =
\"sharedworker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.STYLE: RequestDestination get() =
\"style\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.WORKER: RequestDestination get() =
\"worker\".asDynamic().unsafeCast<RequestDestination>()\n\npublic inline val
RequestDestination.Companion.XSLT: RequestDestination
get() = \"xslt\".asDynamic().unsafeCast<RequestDestination>()\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestMode {\n\n companion object\n\n}\n\npublic inline val RequestMode.Companion.NAVIGATE:
RequestMode get() = \"navigate\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val
RequestMode.Companion.SAME_ORIGIN: RequestMode get() = \"same-
origin\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val RequestMode.Companion.NO_CORS:
RequestMode get() = \"no-cors\".asDynamic().unsafeCast<RequestMode>()\n\npublic inline val
RequestMode.Companion.CORS: RequestMode get() = \"cors\".asDynamic().unsafeCast<RequestMode>()\n\n\n/*
please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestCredentials {\n\n companion object\n\n}\n\npublic inline val RequestCredentials.Companion.OMIT:
RequestCredentials
get() = \"omit\".asDynamic().unsafeCast<RequestCredentials>()\n\npublic inline val
RequestCredentials.Companion.SAME_ORIGIN: RequestCredentials get() = \"same-
origin\".asDynamic().unsafeCast<RequestCredentials>()\n\npublic inline val
RequestCredentials.Companion.INCLUDE: RequestCredentials get() =
\"include\".asDynamic().unsafeCast<RequestCredentials>()\n\n\n/* please, don't implement this interface!
*\n\n@JsName(\"null\")\n\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\n\npublic external
interface RequestCache {\n\n companion object\n\n}\n\npublic inline val RequestCache.Companion.DEFAULT:
RequestCache get() = \"default\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.NO_STORE: RequestCache get() = \"no-
store\".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val RequestCache.Companion.RELOAD:

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RequestCache get() = "reload".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.NO_CACHE: RequestCache get()
= "no-cache".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.FORCE_CACHE: RequestCache get() = "force-
cache".asDynamic().unsafeCast<RequestCache>()\n\npublic inline val
RequestCache.Companion.ONLY_IF_CACHED: RequestCache get() = "only-if-
cached".asDynamic().unsafeCast<RequestCache>()\n\n/* please, don't implement this interface!
*/\n\n@JsName("null")\n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external
interface RequestRedirect {\n companion object\n}\n\npublic inline val RequestRedirect.Companion.FOLLOW:
RequestRedirect get() = "follow".asDynamic().unsafeCast<RequestRedirect>()\n\npublic inline val
RequestRedirect.Companion.ERROR: RequestRedirect get() =
"error".asDynamic().unsafeCast<RequestRedirect>()\n\npublic inline val RequestRedirect.Companion.MANUAL:
RequestRedirect get() = "manual".asDynamic().unsafeCast<RequestRedirect>()\n\n/* please, don't implement this
interface! */\n\n@JsName("null")\n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic
external interface ResponseType {\n companion object\n}\n\npublic inline val
ResponseType.Companion.BASIC: ResponseType get() =
"basic".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val ResponseType.Companion.CORS:
ResponseType get() = "cors".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.DEFAULT: ResponseType get() =
"default".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val ResponseType.Companion.ERROR:
ResponseType get() = "error".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.OPAQUE: ResponseType get() =
"opaque".asDynamic().unsafeCast<ResponseType>()\n\npublic inline val
ResponseType.Companion.OPAQUEREDIRECT: ResponseType get() =
"opaqueredirect".asDynamic().unsafeCast<ResponseType>())/*\n\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO
NOT EDIT!\n\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.dom.mediacapture\n\nimport
kotlin.js.*\n\nimport org.khronos.webgl.*\n\nimport org.w3c.dom.*\n\nimport org.w3c.dom.events.*\n\n/**\n\n * Exposes
the JavaScript [MediaStream](https://developer.mozilla.org/en/docs/Web/API/MediaStream) to Kotlin\n\n */\n\npublic
external open class MediaStream() : EventTarget, MediaProvider {\n constructor(stream: MediaStream)\n
 constructor(tracks: Array<MediaStreamTrack>)\n open val id: String\n open val active: Boolean\n var
onaddtrack: ((MediaStreamTrackEvent) -> dynamic)?\n var onremovetrack: ((MediaStreamTrackEvent) ->
dynamic)?\n fun getAudioTracks(): Array<MediaStreamTrack>\n fun getVideoTracks():
Array<MediaStreamTrack>\n fun getTracks(): Array<MediaStreamTrack>\n fun getTrackById(trackId: String):
MediaStreamTrack?\n fun addTrack(track: MediaStreamTrack)\n
 fun removeTrack(track: MediaStreamTrack)\n fun clone(): MediaStream\n}\n\n/**\n\n * Exposes the JavaScript
[MediaStreamTrack](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrack) to Kotlin\n\n */\n\npublic
external abstract class MediaStreamTrack : EventTarget {\n open val kind: String\n open val id: String\n open
val label: String\n open var enabled: Boolean\n open val muted: Boolean\n open var onmute: ((Event) ->
dynamic)?\n open var onunmute: ((Event) -> dynamic)?\n open val readyState: MediaStreamTrackState\n
 open var onended: ((Event) -> dynamic)?\n open var onoverconstrained: ((Event) -> dynamic)?\n fun clone():
MediaStreamTrack\n fun stop()\n fun getCapabilities(): MediaTrackCapabilities\n fun getConstraints():
MediaTrackConstraints\n fun getSettings(): MediaTrackSettings\n fun applyConstraints(constraints:
MediaTrackConstraints = definedExternally): Promise<Unit>\n}\n\n/**\n\n * Exposes the JavaScript
[MediaTrackSupportedConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSupportedConstrain
ts)

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to Kotlin\n *\npublic external interface MediaTrackSupportedConstraints {\n var width: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var height: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var aspectRatio: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var frameRate: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var facingMode: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var resizeMode: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var volume: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var sampleRate: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var sampleSize: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var echoCancellation: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var autoGainControl: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var noiseSuppression: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var latency: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var channelCount: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var deviceId: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n var groupId: Boolean? /* = true *\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\", \"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackSupportedConstraints(width: Boolean? = true, height: Boolean? = true, aspectRatio: Boolean? = true, frameRate: Boolean? = true, facingMode: Boolean? = true, resizeMode: Boolean? = true, volume: Boolean? = true, sampleRate: Boolean? = true, sampleSize: Boolean? = true, echoCancellation: Boolean? = true, autoGainControl: Boolean? = true, noiseSuppression: Boolean? = true, latency: Boolean? = true, channelCount: Boolean? = true, deviceId: Boolean? = true, groupId: Boolean? = true): MediaTrackSupportedConstraints {\n val o = js(\"({})\")\n o[\"width\"] = width\n o[\"height\"] = height\n o[\"aspectRatio\"] = aspectRatio\n o[\"frameRate\"] = frameRate\n o[\"facingMode\"] = facingMode\n o[\"resizeMode\"] = resizeMode\n o[\"volume\"] = volume\n o[\"sampleRate\"] = sampleRate\n o[\"sampleSize\"] = sampleSize\n o[\"echoCancellation\"] = echoCancellation\n o[\"autoGainControl\"] = autoGainControl\n o[\"noiseSuppression\"] = noiseSuppression\n o[\"latency\"] = latency\n o[\"channelCount\"] = channelCount\n o[\"deviceId\"] = deviceId\n o[\"groupId\"] = groupId\n return o\n}\n\npublic external interface MediaTrackCapabilities {\n var width: ULongRange?\n get() = definedExternally\n set(value) = definedExternally\n var height: ULongRange?\n get() = definedExternally\n set(value) = definedExternally\n var aspectRatio: DoubleRange?\n get() = definedExternally\n set(value) = definedExternally\n var frameRate: DoubleRange?\n get() = definedExternally\n set(value) = definedExternally\n var facingMode: Array<String>?\n get() = definedExternally\n set(value) = definedExternally\n var resizeMode: Array<String>?\n get() = definedExternally\n set(value) = definedExternally\n var volume: DoubleRange?\n get() = definedExternally\n set(value) = definedExternally\n var sampleRate: ULongRange?\n get() = definedExternally\n set(value) = definedExternally\n var sampleSize: ULongRange?\n get() = definedExternally\n set(value) = definedExternally\n var echoCancellation: Array<Boolean>?\n get() = definedExternally\n set(value) = definedExternally\n var autoGainControl: Array<Boolean>?\n get() = definedExternally\n set(value) = definedExternally\n var noiseSuppression: Array<Boolean>?\n get() = definedExternally\n set(value) = definedExternally\n var latency: DoubleRange?\n get() = definedExternally\n set(value) = definedExternally\n var channelCount: ULongRange?\n get() = definedExternally\n set(value) = definedExternally\n var deviceId: String?\n get() = definedExternally\n set(value) = definedExternally\n var groupId: String?\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",

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\ "INVISIBLE_MEMBER"\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackCapabilities(width:
ULongRange? = undefined, height: ULongRange? = undefined, aspectRatio: DoubleRange? = undefined,
frameRate: DoubleRange? = undefined, facingMode: Array<String>? = undefined, resizeMode: Array<String>? =
undefined, volume: DoubleRange? = undefined, sampleRate: ULongRange? = undefined, sampleSize:
ULongRange? = undefined, echoCancellation: Array<Boolean>? = undefined, autoGainControl: Array<Boolean>?
= undefined, noiseSuppression: Array<Boolean>? = undefined, latency: DoubleRange? = undefined, channelCount:
ULongRange? = undefined, deviceId: String? = undefined, groupId: String? = undefined): MediaTrackCapabilities
{\n val o = js("{}")\n o["width"] = width\n o["height"] = height\n o["aspectRatio"] = aspectRatio\n
o["frameRate"]
= frameRate\n o["facingMode"] = facingMode\n o["resizeMode"] = resizeMode\n o["volume"] =
volume\n o["sampleRate"] = sampleRate\n o["sampleSize"] = sampleSize\n o["echoCancellation"] =
echoCancellation\n o["autoGainControl"] = autoGainControl\n o["noiseSuppression"] = noiseSuppression\n
o["latency"] = latency\n o["channelCount"] = channelCount\n o["deviceId"] = deviceId\n o["groupId"] =
groupId\n return o}\n\n**\n * Exposes the JavaScript
[MediaTrackConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaTrackConstraints) to Kotlin\n
*\npublic external interface MediaTrackConstraints : MediaTrackConstraintSet {\n var advanced:
Array<MediaTrackConstraintSet>?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
\ "INVISIBLE_MEMBER"\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackConstraints(advanced:
Array<MediaTrackConstraintSet>?
= undefined, width: dynamic = undefined, height: dynamic = undefined, aspectRatio: dynamic = undefined,
frameRate: dynamic = undefined, facingMode: dynamic = undefined, resizeMode: dynamic = undefined, volume:
dynamic = undefined, sampleRate: dynamic = undefined, sampleSize: dynamic = undefined, echoCancellation:
dynamic = undefined, autoGainControl: dynamic = undefined, noiseSuppression: dynamic = undefined, latency:
dynamic = undefined, channelCount: dynamic = undefined, deviceId: dynamic = undefined, groupId: dynamic =
undefined): MediaTrackConstraints {\n val o = js("{}")\n o["advanced"] = advanced\n o["width"] =
width\n o["height"] = height\n o["aspectRatio"] = aspectRatio\n o["frameRate"] = frameRate\n
o["facingMode"] = facingMode\n o["resizeMode"] = resizeMode\n o["volume"] = volume\n
o["sampleRate"] = sampleRate\n o["sampleSize"] = sampleSize\n o["echoCancellation"] =
echoCancellation\n o["autoGainControl"] =
autoGainControl\n o["noiseSuppression"] = noiseSuppression\n o["latency"] = latency\n
o["channelCount"] = channelCount\n o["deviceId"] = deviceId\n o["groupId"] = groupId\n return
o}\n\npublic external interface MediaTrackConstraintSet {\n var width: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var height: dynamic\n get() = definedExternally\n
set(value) = definedExternally\n var aspectRatio: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var frameRate: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var facingMode: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var resizeMode: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var volume: dynamic\n get() = definedExternally\n set(value) = definedExternally\n
var sampleRate:
dynamic\n get() = definedExternally\n set(value) = definedExternally\n var sampleSize: dynamic\n
get() = definedExternally\n set(value) = definedExternally\n var echoCancellation: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var autoGainControl: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var noiseSuppression: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var latency: dynamic\n get() = definedExternally\n
set(value) = definedExternally\n var channelCount: dynamic\n get() = definedExternally\n set(value) =
definedExternally\n var deviceId: dynamic\n get() = definedExternally\n set(value) = definedExternally\n
var groupId: dynamic\n get() = definedExternally\n set(value) =

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definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\\")\n@kotlin.internal.InlineOnly\npublic
inline fun MediaTrackConstraintSet(width: dynamic = undefined, height: dynamic = undefined, aspectRatio:
dynamic = undefined, frameRate: dynamic = undefined, facingMode: dynamic = undefined, resizeMode: dynamic =
undefined, volume: dynamic = undefined, sampleRate: dynamic = undefined, sampleSize: dynamic = undefined,
echoCancellation: dynamic = undefined, autoGainControl: dynamic = undefined, noiseSuppression: dynamic =
undefined, latency: dynamic = undefined, channelCount: dynamic = undefined, deviceId: dynamic = undefined,
groupId: dynamic = undefined): MediaTrackConstraintSet {\n val o = js(\\"({})\\")\n o[\"width\"] = width\n
o[\"height\"] = height\n o[\"aspectRatio\"] = aspectRatio\n o[\"frameRate\"] = frameRate\n o[\"facingMode\"]
= facingMode\n o[\"resizeMode\"] = resizeMode\n o[\"volume\"] = volume\n o[\"sampleRate\"] =
sampleRate\n o[\"sampleSize\"] = sampleSize\n o[\"echoCancellation\"] = echoCancellation\n
o[\"autoGainControl\"]
= autoGainControl\n o[\"noiseSuppression\"] = noiseSuppression\n o[\"latency\"] = latency\n
o[\"channelCount\"] = channelCount\n o[\"deviceId\"] = deviceId\n o[\"groupId\"] = groupId\n return
o\n}\n\n/**\n * Exposes the JavaScript
[MediaTrackSettings](https://developer.mozilla.org/en/docs/Web/API/MediaTrackSettings) to Kotlin\n *\npublic
external interface MediaTrackSettings {\n var width: Int?\n get() = definedExternally\n set(value) =
definedExternally\n var height: Int?\n get() = definedExternally\n set(value) = definedExternally\n var
aspectRatio: Double?\n get() = definedExternally\n set(value) = definedExternally\n var frameRate:
Double?\n get() = definedExternally\n set(value) = definedExternally\n var facingMode: String?\n
get() = definedExternally\n set(value) = definedExternally\n var resizeMode: String?\n get() =
definedExternally\n set(value)
= definedExternally\n var volume: Double?\n get() = definedExternally\n set(value) =
definedExternally\n var sampleRate: Int?\n get() = definedExternally\n set(value) = definedExternally\n
var sampleSize: Int?\n get() = definedExternally\n set(value) = definedExternally\n var echoCancellation:
Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var autoGainControl: Boolean?\n
get() = definedExternally\n set(value) = definedExternally\n var noiseSuppression: Boolean?\n get() =
definedExternally\n set(value) = definedExternally\n var latency: Double?\n get() = definedExternally\n
set(value) = definedExternally\n var channelCount: Int?\n get() = definedExternally\n set(value) =
definedExternally\n var deviceId: String?\n get() = definedExternally\n set(value) = definedExternally\n
var groupId: String?\n
get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\\"INVISIBLE_REFERENCE\",
\\"INVISIBLE_MEMBER\\")\n@kotlin.internal.InlineOnly\npublic inline fun MediaTrackSettings(width: Int? =
undefined, height: Int? = undefined, aspectRatio: Double? = undefined, frameRate: Double? = undefined,
facingMode: String? = undefined, resizeMode: String? = undefined, volume: Double? = undefined, sampleRate: Int?
= undefined, sampleSize: Int? = undefined, echoCancellation: Boolean? = undefined, autoGainControl: Boolean? =
undefined, noiseSuppression: Boolean? = undefined, latency: Double? = undefined, channelCount: Int? = undefined,
deviceId: String? = undefined, groupId: String? = undefined): MediaTrackSettings {\n val o = js(\\"({})\\")\n
o[\"width\"] = width\n o[\"height\"] = height\n o[\"aspectRatio\"] = aspectRatio\n o[\"frameRate\"] =
frameRate\n o[\"facingMode\"] = facingMode\n o[\"resizeMode\"] = resizeMode\n o[\"volume\"] = volume\n
o[\"sampleRate\"]
= sampleRate\n o[\"sampleSize\"] = sampleSize\n o[\"echoCancellation\"] = echoCancellation\n
o[\"autoGainControl\"] = autoGainControl\n o[\"noiseSuppression\"] = noiseSuppression\n o[\"latency\"] =
latency\n o[\"channelCount\"] = channelCount\n o[\"deviceId\"] = deviceId\n o[\"groupId\"] = groupId\n
return o\n}\n\n/**\n * Exposes the JavaScript
[MediaStreamTrackEvent](https://developer.mozilla.org/en/docs/Web/API/MediaStreamTrackEvent) to Kotlin\n
*\npublic external open class MediaStreamTrackEvent(type: String, eventInitDict: MediaStreamTrackEventInit) :
Event {\n open val track: MediaStreamTrack\n\n companion object {\n val NONE: Short\n val

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CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
}\n}\n\npublic external interface MediaStreamTrackEventInit : EventInit {\n var track:
MediaStreamTrack?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic
inline fun MediaStreamTrackEventInit(track: MediaStreamTrack?, bubbles: Boolean? = false, cancelable: Boolean?
= false, composed: Boolean? = false): MediaStreamTrackEventInit {\n val o = js("{}")\n o["track"] =
track\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return
o\n}\n\npublic external open class OverconstrainedErrorEvent(type: String, eventInitDict:
OverconstrainedErrorEventInit) : Event {\n open val error: dynamic\n\n companion object {\n val NONE:
Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE:
Short\n }\n}\n\npublic external interface OverconstrainedErrorEventInit : EventInit {\n var error: dynamic /* =
null */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun OverconstrainedErrorEventInit(error:
dynamic = null, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
OverconstrainedErrorEventInit {\n val o = js("{}")\n o["error"] = error\n o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[MediaDevices](https://developer.mozilla.org/en/docs/Web/API/MediaDevices) to Kotlin\n */\n\npublic external
abstract class MediaDevices : EventTarget {\n open var ondevicechange: ((Event) -> dynamic)?\n fun
enumerateDevices(): Promise<Array<MediaDeviceInfo>>\n fun getSupportedConstraints():
MediaTrackSupportedConstraints\n fun getUserMedia(constraints: MediaStreamConstraints = definedExternally):
Promise<MediaStream>\n}\n\n/**\n * Exposes the JavaScript
[MediaDeviceInfo](https://developer.mozilla.org/en/docs/Web/API/MediaDeviceInfo) to Kotlin\n */\n\npublic
external abstract class MediaDeviceInfo {\n open val deviceId: String\n open val kind:
MediaDeviceKind\n open val label: String\n open val groupId: String\n fun toJSON(): dynamic\n}\n\npublic
external abstract class InputDeviceInfo : MediaDeviceInfo {\n fun getCapabilities():
MediaTrackCapabilities\n}\n\n/**\n * Exposes the JavaScript
[MediaStreamConstraints](https://developer.mozilla.org/en/docs/Web/API/MediaStreamConstraints) to Kotlin\n
/\n\npublic external interface MediaStreamConstraints {\n var video: dynamic / = false */\n get() =
definedExternally\n set(value) = definedExternally\n var audio: dynamic /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun MediaStreamConstraints(video:
dynamic = false, audio: dynamic = false): MediaStreamConstraints {\n val o = js("{}")\n o["video"] =
video\n o["audio"] = audio\n return o\n}\n\npublic external interface ConstrainingPattern
{\n var onoverconstrained: ((Event) -> dynamic)?\n get() = definedExternally\n set(value) =
definedExternally\n fun getCapabilities(): Capabilities\n fun getConstraints(): Constraints\n fun getSettings():
Settings\n fun applyConstraints(constraints: Constraints = definedExternally): Promise<Unit>\n}\n\n/**\n *
Exposes the JavaScript [DoubleRange](https://developer.mozilla.org/en/docs/Web/API/DoubleRange) to Kotlin\n
*/\n\npublic external interface DoubleRange {\n var max: Double?\n get() = definedExternally\n set(value)
= definedExternally\n var min: Double?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun DoubleRange(max: Double? =
undefined, min: Double? = undefined): DoubleRange {\n val o = js("{}")\n o["max"] = max\n o["min"] =
min\n return o\n}\n\npublic external interface
ConstrainDoubleRange : DoubleRange {\n var exact: Double?\n get() = definedExternally\n set(value) =
definedExternally\n var ideal: Double?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainDoubleRange(exact: Double?

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= undefined, ideal: Double? = undefined, max: Double? = undefined, min: Double? = undefined):
ConstrainDoubleRange {\n val o = js("{}")\n o["exact"] = exact\n o["ideal"] = ideal\n o["max"] =
max\n o["min"] = min\n return o\n}\n\npublic external interface ULongRange {\n var max: Int?\n get() =
definedExternally\n set(value) = definedExternally\n var min: Int?\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ULongRange(max: Int?
= undefined, min: Int? = undefined): ULongRange {\n val o = js("{}")\n o["max"] = max\n o["min"] =
min\n return o\n}\n\npublic external interface ConstrainULongRange : ULongRange {\n var exact: Int?\n
get() = definedExternally\n set(value) = definedExternally\n var ideal: Int?\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainULongRange(exact: Int? =
undefined, ideal: Int? = undefined, max: Int? = undefined, min: Int? = undefined): ConstrainULongRange {\n val o
= js("{}")\n o["exact"] = exact\n o["ideal"] = ideal\n o["max"] = max\n o["min"] = min\n return
o\n}\n\n/**\n * Exposes the JavaScript
[ConstrainBooleanParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainBooleanParameters) to
Kotlin\n *\npublic external interface ConstrainBooleanParameters {\n var exact:
Boolean?\n get() = definedExternally\n set(value) = definedExternally\n var ideal: Boolean?\n get()
= definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ConstrainBooleanParameters(exact:
Boolean? = undefined, ideal: Boolean? = undefined): ConstrainBooleanParameters {\n val o = js("{}")\n
o["exact"] = exact\n o["ideal"] = ideal\n return o\n}\n\n/**\n * Exposes the JavaScript
[ConstrainDOMStringParameters](https://developer.mozilla.org/en/docs/Web/API/ConstrainDOMStringParameters)
to Kotlin\n *\npublic external interface ConstrainDOMStringParameters {\n var exact: dynamic\n get() =
definedExternally\n set(value) = definedExternally\n var ideal: dynamic\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic
inline fun ConstrainDOMStringParameters(exact: dynamic = undefined, ideal: dynamic = undefined):
ConstrainDOMStringParameters {\n val o = js("{}")\n o["exact"] = exact\n o["ideal"] = ideal\n return
o\n}\n\npublic external interface Capabilities\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun Capabilities(): Capabilities {\n val o
= js("{}")\n return o\n}\n\npublic external interface Settings\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun Settings(): Settings {\n val o =
js("{}")\n return o\n}\n\npublic external interface ConstraintSet\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ConstraintSet(): ConstraintSet {\n
val o = js("{}")\n return o\n}\n\npublic external interface Constraints : ConstraintSet {\n var advanced:
Array<ConstraintSet>?\n
get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun Constraints(advanced:
Array<ConstraintSet>? = undefined): Constraints {\n val o = js("{}")\n o["advanced"] = advanced\n
return o\n}\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface MediaStreamTrackState {\n companion object\n}\n\npublic inline val
MediaStreamTrackState.Companion.LIVE: MediaStreamTrackState get() =
"live".asDynamic().unsafeCast<MediaStreamTrackState>()\n\npublic inline val
MediaStreamTrackState.Companion.ENDED: MediaStreamTrackState get() =
"ended".asDynamic().unsafeCast<MediaStreamTrackState>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external

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interface VideoFacingModeEnum {
 companion object {
 public inline val VideoFacingModeEnum.Companion.USER: VideoFacingModeEnum
 get() = "user".asDynamic().unsafeCast<VideoFacingModeEnum>()
 public inline val VideoFacingModeEnum.Companion.ENVIRONMENT: VideoFacingModeEnum
 get() = "environment".asDynamic().unsafeCast<VideoFacingModeEnum>()
 public inline val VideoFacingModeEnum.Companion.LEFT: VideoFacingModeEnum
 get() = "left".asDynamic().unsafeCast<VideoFacingModeEnum>()
 public inline val VideoFacingModeEnum.Companion.RIGHT: VideoFacingModeEnum
 get() = "right".asDynamic().unsafeCast<VideoFacingModeEnum>()
 }
 /* please, don't implement this interface!
 * \n @JsName("null") \n @Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE") \n public external
 interface VideoResizeModeEnum {
 companion object {
 public inline val VideoResizeModeEnum.Companion.NONE: VideoResizeModeEnum
 get() = "none".asDynamic().unsafeCast<VideoResizeModeEnum>()
 public inline val VideoResizeModeEnum.Companion.CROP_AND_SCALE:
 VideoResizeModeEnum
 get() = "crop-and-scale".asDynamic().unsafeCast<VideoResizeModeEnum>()
 }
 /* please, don't implement this interface!
 * \n @JsName("null") \n @Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE") \n public external
 interface MediaDeviceKind {
 companion object {
 public inline val MediaDeviceKind.Companion.AUDIOINPUT: MediaDeviceKind
 get() = "audioinput".asDynamic().unsafeCast<MediaDeviceKind>()
 public inline val MediaDeviceKind.Companion.AUDIOOUTPUT: MediaDeviceKind
 get() = "audiooutput".asDynamic().unsafeCast<MediaDeviceKind>()
 public inline val MediaDeviceKind.Companion.VIDEOINPUT: MediaDeviceKind
 get() = "videoinput".asDynamic().unsafeCast<MediaDeviceKind>()
 }
 }
 }
 /* Copyright 2010-2021 JetBrains s.r.o. and
 Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that
 can be found in the license/LICENSE.txt file.
 * \n // NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
 EDIT! \n // See github.com/kotlin/dukat
 for details \n \n package org.w3c.dom.mediasource \n \n import kotlin.js.* \n import org.khronos.webgl.* \n import
 org.w3c.dom.* \n import org.w3c.dom.events.* \n \n /** \n * Exposes the JavaScript
 [MediaSource](https://developer.mozilla.org/en/docs/Web/API/MediaSource) to Kotlin \n \n public external open
 class MediaSource : EventTarget, MediaProvider {
 open val sourceBuffers: SourceBufferList
 open val activeSourceBuffers: SourceBufferList
 open val readyState: ReadyState
 var duration: Double
 var onsourceopen: ((Event) -> dynamic)?
 var onsourceended: ((Event) -> dynamic)?
 var onsourceclose: ((Event) -> dynamic)?
 fun addSourceBuffer(type: String): SourceBuffer
 fun removeSourceBuffer(sourceBuffer: SourceBuffer)
 fun endOfStream(error: EndOfStreamError = definedExternally)
 fun setLiveSeekableRange(start: Double, end: Double)
 fun clearLiveSeekableRange()
 }
 companion object {
 fun isTypeSupported(type: String): Boolean
 }
}
/** \n * Exposes the JavaScript [SourceBuffer](https://developer.mozilla.org/en/docs/Web/API/SourceBuffer) to Kotlin \n
 * \n public external abstract class SourceBuffer : EventTarget {
 open var mode: AppendMode
 open val updating: Boolean
 open val buffered: TimeRanges
 open var timestampOffset: Double
 open val audioTracks: AudioTrackList
 open val videoTracks: VideoTrackList
 open val textTracks: TextTrackList
 open var appendWindowStart: Double
 open var appendWindowEnd: Double
 open var onupdatestart: ((Event) -> dynamic)?
 open var onupdate: ((Event) -> dynamic)?
 open var onupdateend: ((Event) -> dynamic)?
 open var onerror: ((Event) -> dynamic)?
 open var onabort: ((Event) -> dynamic)?
 fun appendBuffer(data: dynamic)
 fun abort()
 fun remove(start: Double, end: Double)
 }
}
/** \n * Exposes the
 JavaScript [SourceBufferList](https://developer.mozilla.org/en/docs/Web/API/SourceBufferList) to Kotlin \n
 * \n public external

```

```

abstract class SourceBufferList : EventTarget {\n open val length: Int\n open var onaddsourcebuffer: ((Event) ->
dynamic)?\n open var onremovesourcebuffer: ((Event) ->
dynamic)?\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SourceBufferList.get(index:
Int): SourceBuffer? = asDynamic()[index]\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface ReadyState {\n companion object\n}\n\npublic inline val ReadyState.Companion.CLOSED: ReadyState
get() = \"closed\".asDynamic().unsafeCast<ReadyState>()\n\npublic inline val ReadyState.Companion.OPEN:
ReadyState get() = \"open\".asDynamic().unsafeCast<ReadyState>()\n\npublic inline val
ReadyState.Companion.ENDED: ReadyState get() = \"ended\".asDynamic().unsafeCast<ReadyState>()\n\n/*
please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic
external interface EndOfStreamError {\n companion object\n}\n\npublic inline val
EndOfStreamError.Companion.NETWORK: EndOfStreamError get() =
\"network\".asDynamic().unsafeCast<EndOfStreamError>()\n\npublic inline val
EndOfStreamError.Companion.DECODE: EndOfStreamError get() =
\"decode\".asDynamic().unsafeCast<EndOfStreamError>()\n\n/* please, don't implement this interface!
*\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface AppendMode {\n companion object\n}\n\npublic inline val AppendMode.Companion.SEGMENTS:
AppendMode get() = \"segments\".asDynamic().unsafeCast<AppendMode>()\n\npublic inline val
AppendMode.Companion.SEQUENCE: AppendMode get() =
\"sequence\".asDynamic().unsafeCast<AppendMode>()\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt
file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n\n// See github.com/kotlin/dukat for
details\n\npackage org.w3c.dom.pointerevents\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport
org.w3c.dom.*\nimport org.w3c.dom.events.*\n\npublic external interface PointerEventInit : MouseEventInit {\n
var pointerId: Int? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n var width:
Double? /* = 1.0 */\n get() = definedExternally\n set(value) = definedExternally\n var height: Double? /*
= 1.0 */\n get() = definedExternally\n set(value) = definedExternally\n var pressure: Float? /* = 0f */\n
get() = definedExternally\n set(value) = definedExternally\n var tangentialPressure: Float? /* = 0f */\n
get() = definedExternally\n set(value) = definedExternally\n var tiltX: Int? /* = 0 */\n get() =
definedExternally\n set(value) = definedExternally\n var tiltY:
Int? /* = 0 */\n get() = definedExternally\n set(value) = definedExternally\n var twist: Int? /* = 0 */\n
get() = definedExternally\n set(value) = definedExternally\n var pointerType: String? /* = \"\" */\n get() =
definedExternally\n set(value) = definedExternally\n var isPrimary: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun PointerEventInit(pointerId: Int? = 0,
width: Double? = 1.0, height: Double? = 1.0, pressure: Float? = 0f, tangentialPressure: Float? = 0f, tiltX: Int? = 0,
tiltY: Int? = 0, twist: Int? = 0, pointerType: String? = \"\", isPrimary: Boolean? = false, screenX: Int? = 0, screenY:
Int? = 0, clientX: Int? = 0, clientY: Int? = 0, button: Short? = 0, buttons: Short? = 0, relatedTarget: EventTarget? =
null, region: String? = null, ctrlKey: Boolean? = false, shiftKey:
Boolean? = false, altKey: Boolean? = false, metaKey: Boolean? = false, modifierAltGraph: Boolean? = false,
modifierCapsLock: Boolean? = false, modifierFn: Boolean? = false, modifierFnLock: Boolean? = false,
modifierHyper: Boolean? = false, modifierNumLock: Boolean? = false, modifierScrollLock: Boolean? = false,
modifierSuper: Boolean? = false, modifierSymbol: Boolean? = false, modifierSymbolLock: Boolean? = false, view:
Window? = null, detail: Int? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): PointerEventInit {\n val o = js(\"({})\")\n o[\"pointerId\"] = pointerId\n o[\"width\"] = width\n

```

```

o["height"] = height\n o["pressure"] = pressure\n o["tangentialPressure"] = tangentialPressure\n
o["tiltX"] = tiltX\n o["tiltY"] = tiltY\n o["twist"] = twist\n o["pointerType"] = pointerType\n
o["isPrimary"] = isPrimary\n o["screenX"] = screenX\n o["screenY"] = screenY\n o["clientX"]
= clientX\n o["clientY"] = clientY\n o["button"] = button\n o["buttons"] = buttons\n o["relatedTarget"]
= relatedTarget\n o["region"] = region\n o["ctrlKey"] = ctrlKey\n o["shiftKey"] = shiftKey\n
o["altKey"] = altKey\n o["metaKey"] = metaKey\n o["modifierAltGraph"] = modifierAltGraph\n
o["modifierCapsLock"] = modifierCapsLock\n o["modifierFn"] = modifierFn\n o["modifierFnLock"] =
modifierFnLock\n o["modifierHyper"] = modifierHyper\n o["modifierNumLock"] = modifierNumLock\n
o["modifierScrollLock"] = modifierScrollLock\n o["modifierSuper"] = modifierSuper\n
o["modifierSymbol"] = modifierSymbol\n o["modifierSymbolLock"] = modifierSymbolLock\n o["view"] =
view\n o["detail"] = detail\n o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] =
composed\n return o\n}\n\n/**\n * Exposes the JavaScript

```

[PointerEvent](<https://developer.mozilla.org/en/docs/Web/API/PointerEvent>)

```

to Kotlin\n *\npublic external open class PointerEvent(type: String, eventInitDict: PointerEventInit =
definedExternally) : MouseEvent {\n open val pointerId: Int\n open val width: Double\n open val height:
Double\n open val pressure: Float\n open val tangentialPressure: Float\n open val tiltX: Int\n open val tiltY:
Int\n open val twist: Int\n open val pointerType: String\n open val isPrimary: Boolean\n\n companion object
{\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n},"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See
github.com/kotlin/dukat for details\n\npackage org.w3c.dom.svg\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport

```

```

org.w3c.dom.*\nimport org.w3c.dom.css.*\n\n/**\n * Exposes the JavaScript

```

```

[SVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGElement) to Kotlin\n *\npublic external
abstract class SVGElement : Element, ElementCSSInlineStyle, GlobalEventHandlers, SVGElementInstance {\n
open val dataset: DOMStringMap\n open val ownerSVGElement: SVGSVGElement?\n open val
viewportElement: SVGElement?\n open var tabIndex: Int\n fun focus()\n fun blur()\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n

```

```

 val DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING:
Short\n val DOCUMENT_POSITION_CONTAINS: Short\n val
DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external interface
SVGBoundingBoxOptions {\n var fill: Boolean? /* = true */\n get() = definedExternally\n set(value) =
definedExternally\n var stroke: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var markers: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var clipped: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",

```

```

"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun SVGBoundingBoxOptions(fill:
Boolean? = true, stroke: Boolean? = false, markers: Boolean? = false, clipped: Boolean?
= false): SVGBoundingBoxOptions {\n val o = js("{}")\n o["fill"] = fill\n o["stroke"] = stroke\n
o["markers"] = markers\n o["clipped"] = clipped\n return o\n}\n\n/**\n * Exposes the JavaScript

```

```

[SVGGraphicsElement](https://developer.mozilla.org/en/docs/Web/API/SVGGraphicsElement) to Kotlin\n

```



```

*^/npublic external abstract class SVGGraphicsElement : SVGElement, SVGTests {
 open val transform: SVGAnimatedTransformList
 fun getBBox(options: SVGBoundingBoxOptions = definedExternally): DOMRect
 fun getCTM(): DOMMatrix?
 fun getScreenCTM(): DOMMatrix?
 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
 }
}
/n/n/**
 * Exposes the JavaScript [SVGGeometryElement](https://developer.mozilla.org/en/docs/Web/API/SVGGeometryElement) to Kotlin
*^/npublic external abstract class SVGGeometryElement : SVGGraphicsElement {
 open val pathLength: SVGAnimatedNumber
 fun isPointInFill(point: DOMPoint): Boolean
 fun isPointInStroke(point: DOMPoint): Boolean
 fun getTotalLength(): Float
 fun getPointAtLength(distance: Float): DOMPoint
 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
 }
}
/n/n/**
 * Exposes the JavaScript [SVGNumber](https://developer.mozilla.org/en/docs/Web/API/SVGNumber) to Kotlin
*^/npublic external abstract class SVGNumber {
 open var value: Float
}
/n/n/**
 * Exposes the JavaScript [SVGLength](https://developer.mozilla.org/en/docs/Web/API/SVGLength) to Kotlin
*^/npublic external abstract class SVGLength {
 open val unitType: Short
 open var value: Float
 open var valueInSpecifiedUnits: Float
 open var valueAsString: String
 fun newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits: Float)
 fun convertToSpecifiedUnits(unitType: Short)
 companion object {
 val SVG_LENGTHTYPE_UNKNOWN: Short
 val SVG_LENGTHTYPE_NUMBER: Short
 val SVG_LENGTHTYPE_PERCENTAGE: Short
 val SVG_LENGTHTYPE_EMS: Short
 val SVG_LENGTHTYPE_EXS: Short
 val SVG_LENGTHTYPE_PX: Short
 val SVG_LENGTHTYPE_CM: Short
 val SVG_LENGTHTYPE_MM: Short
 val SVG_LENGTHTYPE_IN: Short
 val SVG_LENGTHTYPE_PT: Short
 val SVG_LENGTHTYPE_PC: Short
 }
}
/n/n/**
 * Exposes the JavaScript [SVGAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAngle) to Kotlin
*^/npublic external abstract class SVGAngle {
 open val unitType: Short
 open var value: Float
 open var valueInSpecifiedUnits: Float
 open var valueAsString: String
 fun newValueSpecifiedUnits(unitType: Short, valueInSpecifiedUnits: Float)
 fun convertToSpecifiedUnits(unitType: Short)
 companion object {
 val SVG_ANGLETYPE_UNKNOWN: Short
 val SVG_ANGLETYPE_UNSPECIFIED: Short
 val SVG_ANGLETYPE_DEG: Short
 val SVG_ANGLETYPE_RAD: Short
 val SVG_ANGLETYPE_GRAD: Short
 }
}
/n/npublic external abstract class SVGNameList {
 open val length: Int
 open val numberOfItems: Int
 fun clear()
 fun initialize(newItem: dynamic): dynamic
 fun insertItemBefore(newItem: dynamic, index: Int): dynamic
 fun replaceItem(newItem: dynamic, index: Int): dynamic
 fun removeItem(index: Int): dynamic
 fun appendItem(newItem: dynamic): dynamic
 fun getItem(index: Int):

```

```

dynamic\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE\ ",
\ "INVISIBLE_MEMBER\ ")@kotlin.internal.InlineOnly\npublic inline operator fun SVGNameList.get(index: Int):
dynamic = asDynamic()[index]\n\n@Suppress(\ "INVISIBLE_REFERENCE\ ",
\ "INVISIBLE_MEMBER\ ")@kotlin.internal.InlineOnly\npublic inline operator fun SVGNameList.set(index: Int,
newItem: dynamic) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGNumberList) to Kotlin\n *\n\npublic external
abstract class SVGNumberList {\n open val length: Int\n open val numberOfItems: Int\n fun clear()\n fun
initialize(newItem: SVGNumber): SVGNumber\n fun insertItemBefore(newItem: SVGNumber, index: Int):
SVGNumber\n fun replaceItem(newItem: SVGNumber, index: Int): SVGNumber\n fun removeItem(index: Int):
SVGNumber\n fun appendItem(newItem: SVGNumber): SVGNumber\n fun getItem(index: Int):
SVGNumber\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE\ ",
\ "INVISIBLE_MEMBER\ ")@kotlin.internal.InlineOnly\npublic inline operator fun SVGNumberList.get(index:
Int): SVGNumber? = asDynamic()[index]\n\n@Suppress(\ "INVISIBLE_REFERENCE\ ",
\ "INVISIBLE_MEMBER\ ")@kotlin.internal.InlineOnly\npublic
inline operator fun SVGNumberList.set(index: Int, newItem: SVGNumber) { asDynamic()[index] = newItem
}\n\n/**\n * Exposes the JavaScript
[SVGLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGLengthList) to Kotlin\n *\n\npublic external
abstract class SVGLengthList {\n open val length: Int\n open val numberOfItems: Int\n fun clear()\n fun
initialize(newItem: SVGLength): SVGLength\n fun insertItemBefore(newItem: SVGLength, index: Int):
SVGLength\n fun replaceItem(newItem: SVGLength, index: Int): SVGLength\n fun removeItem(index: Int):
SVGLength\n fun appendItem(newItem: SVGLength): SVGLength\n fun getItem(index: Int):
SVGLength\n}\n\n@Suppress(\ "INVISIBLE_REFERENCE\ ",
\ "INVISIBLE_MEMBER\ ")@kotlin.internal.InlineOnly\npublic inline operator fun SVGLengthList.get(index:
Int): SVGLength? = asDynamic()[index]\n\n@Suppress(\ "INVISIBLE_REFERENCE\ ",
\ "INVISIBLE_MEMBER\ ")@kotlin.internal.InlineOnly\npublic inline operator fun SVGLengthList.set(index:
Int, newItem: SVGLength) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGAnimatedBoolean](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedBoolean) to Kotlin\n
*\n\npublic external abstract class SVGAnimatedBoolean {\n open var baseVal: Boolean\n open val animVal:
Boolean\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedEnumeration](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedEnumeration) to
Kotlin\n *\n\npublic external abstract class SVGAnimatedEnumeration {\n open var baseVal: Short\n open val
animVal: Short\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedInteger](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedInteger) to Kotlin\n
*\n\npublic external abstract class SVGAnimatedInteger {\n open var baseVal: Int\n open val animVal:
Int\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedNumber](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumber) to Kotlin\n
*\n\npublic external abstract class SVGAnimatedNumber
{\n open var baseVal: Float\n open val animVal: Float\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedLength](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLength) to Kotlin\n
*\n\npublic external abstract class SVGAnimatedLength {\n open val baseVal: SVGLength\n open val animVal:
SVGLength\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedAngle](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedAngle) to Kotlin\n *\n\npublic
external abstract class SVGAnimatedAngle {\n open val baseVal: SVGAngle\n open val animVal:
SVGAngle\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedString](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedString) to Kotlin\n *\n\npublic
external abstract class SVGAnimatedString {\n open var baseVal: String\n open val animVal: String\n}\n\n/**\n
* Exposes the JavaScript [SVGAnimatedRect](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedRect)
to Kotlin\n *\n\npublic external abstract class SVGAnimatedRect

```

```

{\n open val baseVal: DOMRect\n open val animVal: DOMRectReadOnly\n}\n\n/**\n * Exposes the
JavaScript [SVGAnimatedNumberList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedNumberList)
to Kotlin\n */\n\npublic external abstract class SVGAnimatedNumberList {\n open val baseVal: SVGNumberList\n open val animVal: SVGNumberList\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedLengthList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedLengthList) to Kotlin\n
*/\n\npublic external abstract class SVGAnimatedLengthList {\n open val baseVal: SVGLengthList\n open val
animVal: SVGLengthList\n}\n\n/**\n * Exposes the JavaScript
[SVGStringList](https://developer.mozilla.org/en/docs/Web/API/SVGStringList) to Kotlin\n */\n\npublic external
abstract class SVGStringList {\n open val length: Int\n open val numberOfItems: Int\n fun clear()\n fun
initialize(newItem: String): String\n fun insertItemBefore(newItem: String, index: Int): String\n fun
replaceItem(newItem:
String, index: Int): String\n fun removeItem(index: Int): String\n fun appendItem(newItem: String): String\n
fun getItem(index: Int): String\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGStringList.get(index:
Int): String? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\n\npublic inline operator fun SVGStringList.set(index: Int,
newItem: String) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGUnitTypes](https://developer.mozilla.org/en/docs/Web/API/SVGUnitTypes) to Kotlin\n
*/\n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external interface SVGUnitTypes
{\n companion object {\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val
SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX:
Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGTTests](https://developer.mozilla.org/en/docs/Web/API/SVGTTests)
to Kotlin\n */\n\npublic external interface SVGTTests {\n val requiredExtensions: SVGStringList\n val
systemLanguage: SVGStringList\n}\n\npublic external interface SVGFitToViewBox {\n val viewBox:
SVGAnimatedRect\n val preserveAspectRatio: SVGAnimatedPreserveAspectRatio\n}\n\n/**\n * Exposes the
JavaScript [SVGZoomAndPan](https://developer.mozilla.org/en/docs/Web/API/SVGZoomAndPan) to Kotlin\n
*/\n\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\n\npublic external interface
SVGZoomAndPan {\n var zoomAndPan: Short\n\n companion object {\n val
SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE: Short\n val
SVG_ZOOMANDPAN_MAGNIFY: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGURIReference](https://developer.mozilla.org/en/docs/Web/API/SVGURIReference) to Kotlin\n */\n\npublic
external interface SVGURIReference {\n val href: SVGAnimatedString\n}\n\n/**\n * Exposes the JavaScript
[SVGSVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGSVGElement)
to Kotlin\n */\n\npublic external abstract class SVGSVGElement : SVGGraphicsElement, SVGFitToViewBox,
SVGZoomAndPan, WindowEventHandlers {\n open val x: SVGAnimatedLength\n open val y:
SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n open
var currentScale: Float\n open val currentTranslate: DOMPointReadOnly\n fun getIntersectionList(rect:
DOMRectReadOnly, referenceElement: SVGElement?): NodeList\n fun getEnclosureList(rect:
DOMRectReadOnly, referenceElement: SVGElement?): NodeList\n fun checkIntersection(element: SVGElement,
rect: DOMRectReadOnly): Boolean\n fun checkEnclosure(element: SVGElement, rect: DOMRectReadOnly):
Boolean\n fun deselectAll()\n fun createSVGNumber(): SVGNumber\n fun createSVGLength(): SVGLength\n
fun createSVGAngle(): SVGAngle\n fun createSVGPoint(): DOMPoint\n fun createSVGMatrix():
DOMMatrix\n fun createSVGRect(): DOMRect\n
fun createSVGTransform(): SVGTransform\n fun createSVGTransformFromMatrix(matrix:
DOMMatrixReadOnly): SVGTransform\n fun getElementById(elementId: String): Element\n fun
suspendRedraw(maxWaitMilliseconds: Int): Int\n fun unsuspendRedraw(suspendHandleID: Int)\n fun
unsuspendRedrawAll()\n fun forceRedraw()\n\n companion object {\n val

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SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE: Short\n val
SVG_ZOOMANDPAN_MAGNIFY: Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the
JavaScript [SVGGElement](https://developer.mozilla.org/en/docs/Web/API/SVGGElement) to Kotlin\n */\npublic
external abstract class SVGGElement : SVGGraphicsElement {\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS:
Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class
SVGUnknownElement : SVGGraphicsElement {\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [SVGDefsElement](https://developer.mozilla.org/en/docs/Web/API/SVGDefsElement) to Kotlin\n */\npublic
external abstract class SVGDefsElement : SVGGraphicsElement {\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGDescElement](https://developer.mozilla.org/en/docs/Web/API/SVGDescElement) to Kotlin\n */\npublic
external abstract class SVGDescElement : SVGElement {\n companion object {\n val ELEMENT_NODE:
Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE:
Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val

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DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC:  
Short\n }\n}\n\n/\*\*\n \* Exposes the JavaScript  
[SVGMetadataElement](https://developer.mozilla.org/en/docs/Web/API/SVGMetadataElement) to Kotlin\n  
\*/\npublic external abstract class SVGMetadataElement : SVGElement {\n companion object {\n val  
ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val  
CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE:  
Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val  
DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC:  
Short\n }\n}\n\n/\*\*\n \* Exposes the JavaScript  
[SVGTitleElement](https://developer.mozilla.org/en/docs/Web/API/SVGTitleElement) to Kotlin\n \*/\npublic  
external abstract class SVGTitleElement : SVGElement {\n companion object {\n val ELEMENT\_NODE:  
Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE:  
Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val  
PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val  
DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n/\*\*\n  
\* Exposes the JavaScript  
[SVGSymbolElement](https://developer.mozilla.org/en/docs/Web/API/SVGSymbolElement) to Kotlin\n \*/\npublic  
external abstract class SVGSymbolElement : SVGGraphicsElement, SVGFitToViewBox {\n companion object  
{\n val ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n  
val CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val  
ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE:  
Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n }\n}\n\n/\*\*\n  
\* Exposes the JavaScript [SVGUseElement](https://developer.mozilla.org/en/docs/Web/API/SVGUseElement) to  
Kotlin\n \*/\npublic external abstract class SVGUseElement : SVGGraphicsElement, SVGURIReference {\n open  
val x: SVGAnimatedLength\n open val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n  
open val height: SVGAnimatedLength\n open val instanceRoot: SVGElement?\n open val  
animatedInstanceRoot: SVGElement?\n\n companion object {\n val ELEMENT\_NODE: Short\n val  
ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val

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ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external open class
SVGUseElementShadowRoot : ShadowRoot {\n companion object {\n val ELEMENT_NODE: Short\n
val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external
interface SVGElementInstance {\n val correspondingElement: SVGElement?\n get() = definedExternally\n
val correspondingUseElement: SVGUseElement?\n get() = definedExternally\n}\n\npublic external open class
ShadowAnimation(source: dynamic, newTarget: dynamic) {\n open val sourceAnimation: dynamic\n}\n\n/**\n *
Exposes the JavaScript [SVGSwitchElement](https://developer.mozilla.org/en/docs/Web/API/SVGSwitchElement)
to Kotlin\n */\n\npublic external abstract class SVGSwitchElement : SVGGraphicsElement {\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE:
Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external interface
GetSVGDocument {\n fun getSVGDocument(): Document\n}\n\n/**\n * Exposes the JavaScript
[SVGStyleElement](https://developer.mozilla.org/en/docs/Web/API/SVGStyleElement) to Kotlin\n */\n\npublic
external abstract class SVGStyleElement : SVGElement, LinkStyle {\n open var type: String\n open var media:
String\n open var title: String\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGTransform](https://developer.mozilla.org/en/docs/Web/API/SVGTransform) to Kotlin\n */\n\npublic external
abstract class SVGTransform {\n open val type: Short\n open val matrix: DOMMatrix\n open val angle:
Float\n fun setMatrix(matrix: DOMMatrixReadOnly)\n fun setTranslate(tx: Float, ty: Float)\n fun setScale(sx:

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Float, sy: Float)\n fun setRotate(angle: Float, cx: Float, cy:
Float)\n fun setSkewX(angle: Float)\n fun setSkewY(angle: Float)\n\n companion object {\n val
SVG_TRANSFORM_UNKNOWN: Short\n val SVG_TRANSFORM_MATRIX: Short\n val
SVG_TRANSFORM_TRANSLATE: Short\n val SVG_TRANSFORM_SCALE: Short\n val
SVG_TRANSFORM_ROTATE: Short\n val SVG_TRANSFORM_SKEWX: Short\n val
SVG_TRANSFORM_SKEWY: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGTransformList](https://developer.mozilla.org/en/docs/Web/API/SVGTransformList) to Kotlin\n */\npublic
external abstract class SVGTransformList {\n open val length: Int\n open val numberOfItems: Int\n fun
clear()\n fun initialize(newItem: SVGTransform): SVGTransform\n fun insertItemBefore(newItem:
SVGTransform, index: Int): SVGTransform\n fun replaceItem(newItem: SVGTransform, index: Int):
SVGTransform\n fun removeItem(index: Int): SVGTransform\n fun appendItem(newItem: SVGTransform):
SVGTransform\n fun createSVGTransformFromMatrix(matrix:
DOMMatrixReadOnly): SVGTransform\n fun consolidate(): SVGTransform?\n fun getItem(index: Int):
SVGTransform\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGTransformList.get(index:
Int): SVGTransform? = asDynamic()[index]\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGTransformList.set(index:
Int, newItem: SVGTransform) { asDynamic()[index] = newItem }\n\n/**\n * Exposes the JavaScript
[SVGAnimatedTransformList](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedTransformList) to
Kotlin\n */\npublic external abstract class SVGAnimatedTransformList {\n open val baseVal:
SVGTransformList\n open val animVal: SVGTransformList\n}\n\n/**\n * Exposes the JavaScript
[SVGPreserveAspectRatio](https://developer.mozilla.org/en/docs/Web/API/SVGPreserveAspectRatio) to Kotlin\n
*/\npublic external abstract class SVGPreserveAspectRatio
{\n open var align: Short\n open var meetOrSlice: Short\n\n companion object {\n val
SVG_PRESERVEASPECTRATIO_UNKNOWN: Short\n val SVG_PRESERVEASPECTRATIO_NONE:
Short\n val SVG_PRESERVEASPECTRATIO_XMINYMIN: Short\n val
SVG_PRESERVEASPECTRATIO_XMIDYMIN: Short\n val
SVG_PRESERVEASPECTRATIO_XMAXYMIN: Short\n val
SVG_PRESERVEASPECTRATIO_XMINYMID: Short\n val
SVG_PRESERVEASPECTRATIO_XMIDYMID: Short\n val
SVG_PRESERVEASPECTRATIO_XMAXYMID: Short\n val
SVG_PRESERVEASPECTRATIO_XMINYMAX: Short\n val
SVG_PRESERVEASPECTRATIO_XMIDYMAX: Short\n val
SVG_PRESERVEASPECTRATIO_XMAXYMAX: Short\n val SVG_MEETORSLICE_UNKNOWN: Short\n
val SVG_MEETORSLICE_MEET: Short\n val SVG_MEETORSLICE_SLICE: Short\n }\n}\n\n/**\n *
Exposes the JavaScript
[SVGAnimatedPreserveAspectRatio](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedPreserveAspect
Ratio) to Kotlin\n */\npublic external abstract class
SVGAnimatedPreserveAspectRatio {\n open val baseVal: SVGPreserveAspectRatio\n open val animVal:
SVGPreserveAspectRatio\n}\n\n/**\n * Exposes the JavaScript
[SVGPathElement](https://developer.mozilla.org/en/docs/Web/API/SVGPathElement) to Kotlin\n */\npublic
external abstract class SVGPathElement : SVGGeometryElement {\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n

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 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val
DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}\n\n/**\n * Exposes the JavaScript
[SVGRectElement](https://developer.mozilla.org/en/docs/Web/API/SVGRectElement) to Kotlin\n *\npublic
external abstract class SVGRectElement : SVGGeometryElement {\n open val x: SVGAnimatedLength\n open
val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val height: SVGAnimatedLength\n
 open val rx: SVGAnimatedLength\n open val ry: SVGAnimatedLength\n\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n
 val DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING:
Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}\n\n/**\n * Exposes the
JavaScript [SVGCircleElement](https://developer.mozilla.org/en/docs/Web/API/SVGCircleElement) to Kotlin\n
*\npublic external abstract class SVGCircleElement : SVGGeometryElement {\n open val cx:
SVGAnimatedLength\n open val cy: SVGAnimatedLength\n open val r: SVGAnimatedLength\n\n companion
object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE:
Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE:
Short\n val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}\n\n/**\n * Exposes the JavaScript
[SVGEllipseElement](https://developer.mozilla.org/en/docs/Web/API/SVGEllipseElement) to Kotlin\n *\npublic
external abstract class SVGEllipseElement : SVGGeometryElement {\n open val cx: SVGAnimatedLength\n
 open val cy: SVGAnimatedLength\n open val rx: SVGAnimatedLength\n open val ry: SVGAnimatedLength\n
 companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n
 val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }n}\n\n/**\n * Exposes the JavaScript
[SVGLineElement](https://developer.mozilla.org/en/docs/Web/API/SVGLineElement) to Kotlin\n *\npublic
external abstract class SVGLineElement : SVGGeometryElement {\n open val x1: SVGAnimatedLength\n open
val y1: SVGAnimatedLength\n open val x2: SVGAnimatedLength\n open val y2: SVGAnimatedLength\n\n
 companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE:

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Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGMeshElement](https://developer.mozilla.org/en/docs/Web/API/SVGMeshElement) to Kotlin\n *\npublic
external abstract class SVGMeshElement : SVGGeometryElement, SVGURIReference {\n companion object {\n
 val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE:
Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGAnimatedPoints](https://developer.mozilla.org/en/docs/Web/API/SVGAnimatedPoints) to Kotlin\n *\npublic
external interface SVGAnimatedPoints {\n val points: SVGPointList\n val animatedPoints:
SVGPointList\n}\n\npublic external abstract class SVGPointList {\n open val length: Int\n
 open val numberOfItems: Int\n fun clear()\n fun initialize(newItem: DOMPoint): DOMPoint\n fun
insertItemBefore(newItem: DOMPoint, index: Int): DOMPoint\n fun replaceItem(newItem: DOMPoint, index:
Int): DOMPoint\n fun removeItem(index: Int): DOMPoint\n fun appendItem(newItem: DOMPoint):
DOMPoint\n fun getItem(index: Int): DOMPoint\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGPointList.get(index: Int):
DOMPoint? = asDynamic()[index]\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun SVGPointList.set(index: Int,
newItem: DOMPoint) { asDynamic()[index] = newItem }\n}\n\n/**\n * Exposes the JavaScript
[SVGPolylineElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolylineElement) to Kotlin\n *\npublic
external abstract class SVGPolylineElement : SVGGeometryElement, SVGAnimatedPoints {\n
companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGPolygonElement](https://developer.mozilla.org/en/docs/Web/API/SVGPolygonElement) to Kotlin\n *\npublic
external abstract class SVGPolygonElement : SVGGeometryElement, SVGAnimatedPoints {\n
companion object {\n
 val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val

```



DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n } \n \n /\*\* \n \* Exposes the JavaScript  
[SVGTSpanElement](https://developer.mozilla.org/en/docs/Web/API/SVGTSpanElement)  
to Kotlin \n \* \n public external abstract class SVGTSpanElement : SVGTextPositioningElement { \n companion  
object { \n val LENGTHADJUST\_UNKNOWN: Short\n val LENGTHADJUST\_SPACING: Short\n  
val LENGTHADJUST\_SPACINGANDGLYPHS: Short\n val ELEMENT\_NODE: Short\n val  
ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val  
ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE: Short\n val  
PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val  
DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC:  
Short\n } \n } \n \n /\*\* \n \* Exposes the JavaScript  
[SVGTextPathElement](https://developer.mozilla.org/en/docs/Web/API/SVGTextPathElement) to Kotlin \n  
\* \n public external abstract class SVGTextPathElement : SVGTextContentElement, SVGURIReference { \n open  
val startOffset: SVGAnimatedLength \n open val method: SVGAnimatedEnumeration \n open val spacing:  
SVGAnimatedEnumeration \n \n companion object { \n val TEXTPATH\_METHODTYPE\_UNKNOWN:  
Short\n val TEXTPATH\_METHODTYPE\_ALIGN: Short\n val  
TEXTPATH\_METHODTYPE\_STRETCH: Short\n val TEXTPATH\_SPACINGTYPE\_UNKNOWN: Short\n  
val TEXTPATH\_SPACINGTYPE\_AUTO: Short\n val TEXTPATH\_SPACINGTYPE\_EXACT: Short\n  
val LENGTHADJUST\_UNKNOWN: Short\n val LENGTHADJUST\_SPACING: Short\n val  
LENGTHADJUST\_SPACINGANDGLYPHS: Short\n val ELEMENT\_NODE: Short\n val  
ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val CDATA\_SECTION\_NODE: Short\n val  
ENTITY\_REFERENCE\_NODE:  
Short\n val ENTITY\_NODE: Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val  
COMMENT\_NODE: Short\n val DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n  
val DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n  
val DOCUMENT\_POSITION\_FOLLOWING: Short\n val DOCUMENT\_POSITION\_CONTAINS: Short\n  
val DOCUMENT\_POSITION\_CONTAINED\_BY: Short\n val  
DOCUMENT\_POSITION\_IMPLEMENTATION\_SPECIFIC: Short\n } \n } \n \n /\*\* \n \* Exposes the JavaScript  
[SVGImageElement](https://developer.mozilla.org/en/docs/Web/API/SVGImageElement) to Kotlin \n \* \n public  
external abstract class SVGImageElement : SVGGraphicsElement, SVGURIReference,  
HTMLOrSVGImageElement { \n open val x: SVGAnimatedLength \n open val y: SVGAnimatedLength \n open  
val width: SVGAnimatedLength \n open val height: SVGAnimatedLength \n open val preserveAspectRatio:  
SVGAnimatedPreserveAspectRatio \n open var crossOrigin: String? \n \n companion object { \n val  
ELEMENT\_NODE: Short\n val ATTRIBUTE\_NODE: Short\n val TEXT\_NODE: Short\n val  
CDATA\_SECTION\_NODE: Short\n val ENTITY\_REFERENCE\_NODE: Short\n val ENTITY\_NODE:  
Short\n val PROCESSING\_INSTRUCTION\_NODE: Short\n val COMMENT\_NODE: Short\n val  
DOCUMENT\_NODE: Short\n val DOCUMENT\_TYPE\_NODE: Short\n val  
DOCUMENT\_FRAGMENT\_NODE: Short\n val NOTATION\_NODE: Short\n val  
DOCUMENT\_POSITION\_DISCONNECTED: Short\n val DOCUMENT\_POSITION\_PRECEDING: Short\n

```

 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGForeignObjectElement](https://developer.mozilla.org/en/docs/Web/API/SVGForeignObjectElement)
to Kotlin\n *\npublic external abstract class SVGForeignObjectElement : SVGGraphicsElement {\n open val x:
SVGAnimatedLength\n open val y: SVGAnimatedLength\n open val width: SVGAnimatedLength\n open val
height: SVGAnimatedLength\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC:
Short\n }\n}\n\npublic external abstract class SVGMarkerElement : SVGElement, SVGFitToViewBox {\n open
val refX: SVGAnimatedLength\n open val refY: SVGAnimatedLength\n open val markerUnits:
SVGAnimatedEnumeration\n open val markerWidth: SVGAnimatedLength\n open val markerHeight:
SVGAnimatedLength\n open val orientType: SVGAnimatedEnumeration\n open val orientAngle:
SVGAnimatedAngle\n open var orient: String\n fun setOrientToAuto()\n fun setOrientToAngle(angle:
SVGAngle)\n\n companion object {\n val SVG_MARKERUNITS_UNKNOWN: Short\n val
SVG_MARKERUNITS_USERSPACEONUSE: Short\n val SVG_MARKERUNITS_STROKEWIDTH:
Short\n val SVG_MARKER_ORIENT_UNKNOWN: Short\n val SVG_MARKER_ORIENT_AUTO:
Short\n val SVG_MARKER_ORIENT_ANGLE: Short\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n
 val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
 val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n\n/**\n * Exposes the JavaScript
[SVGSolidcolorElement](https://developer.mozilla.org/en/docs/Web/API/SVGSolidcolorElement) to Kotlin\n
*\npublic external abstract class SVGSolidcolorElement : SVGElement {\n companion object {\n val
ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val
CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n
 val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
 val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n\n/**\n * Exposes the JavaScript
[SVGGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGGradientElement) to Kotlin\n
*\npublic external abstract class SVGGradientElement : SVGElement, SVGURIReference, SVGUnitTypes {\n
 open val gradientUnits: SVGAnimatedEnumeration\n open val gradientTransform: SVGAnimatedTransformList\n

```

```

open val spreadMethod: SVGAnimatedEnumeration\n\n companion object {\n
 val SVG_SPREADMETHOD_UNKNOWN: Short\n val SVG_SPREADMETHOD_PAD: Short\n val
 SVG_SPREADMETHOD_REFLECT: Short\n val SVG_SPREADMETHOD_REPEAT: Short\n val
 SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val
 SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n val ELEMENT_NODE: Short\n val
 ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
 ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
 PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
 DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
 DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
 DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the

```

JavaScript

```

[SVGLinearGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGLinearGradientElement) to
Kotlin\n\n */\npublic external abstract class SVGLinearGradientElement : SVGGradientElement {\n open val x1:
SVGAnimatedLength\n open val y1: SVGAnimatedLength\n open val x2: SVGAnimatedLength\n open val
y2: SVGAnimatedLength\n\n companion object {\n val SVG_SPREADMETHOD_UNKNOWN: Short\n
 val SVG_SPREADMETHOD_PAD: Short\n val SVG_SPREADMETHOD_REFLECT: Short\n val
 SVG_SPREADMETHOD_REPEAT: Short\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val
 SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX:
Short\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
 val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
 ENTITY_NODE: Short\n
 val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
 DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
 DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
 DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
 DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript

```

```

[SVGRadialGradientElement](https://developer.mozilla.org/en/docs/Web/API/SVGRadialGradientElement) to
Kotlin\n\n */\npublic external abstract class SVGRadialGradientElement : SVGGradientElement {\n open val cx:
SVGAnimatedLength\n open val cy: SVGAnimatedLength\n open val r: SVGAnimatedLength\n open val fx:
SVGAnimatedLength\n open val fy: SVGAnimatedLength\n open val fr: SVGAnimatedLength\n\n companion
object {\n val SVG_SPREADMETHOD_UNKNOWN: Short\n val SVG_SPREADMETHOD_PAD:
Short\n val SVG_SPREADMETHOD_REFLECT: Short\n val SVG_SPREADMETHOD_REPEAT:
Short\n val SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE:
Short\n val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n val ELEMENT_NODE: Short\n
 val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n
 val ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
 PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
 DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
 DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
 DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY:

```

```

Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external
abstract class SVGMeshGradientElement : SVGGradientElement {\n companion object {\n val
SVG_SPREADMETHOD_UNKNOWN: Short\n val SVG_SPREADMETHOD_PAD: Short\n val
SVG_SPREADMETHOD_REFLECT: Short\n val SVG_SPREADMETHOD_REPEAT: Short\n val
SVG_UNIT_TYPE_UNKNOWN: Short\n val SVG_UNIT_TYPE_USERSPACEONUSE: Short\n val
SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED:
Short\n val DOCUMENT_POSITION_PRECEDING: Short\n val
DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class
SVGMeshrowElement : SVGElement {\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\npublic external abstract class
SVGMeshpatchElement : SVGElement {\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGStopElement](https://developer.mozilla.org/en/docs/Web/API/SVGStopElement) to Kotlin\n *\npublic
external abstract class SVGStopElement : SVGElement {\n open val offset: SVGAnimatedNumber\n\n companion object {\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val
TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE:
Short\n val ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val
COMMENT_NODE: Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n
val DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n *

```

Exposes the JavaScript [SVGPatternElement](https://developer.mozilla.org/en/docs/Web/API/SVGPatternElement) to Kotlin

```

public external abstract class SVGPatternElement : SVGElement, SVGFitToViewBox,
SVGURIReference, SVGUnitTypes {
 open val patternUnits: SVGAnimatedEnumeration
 open val patternContentUnits: SVGAnimatedEnumeration
 open val patternTransform: SVGAnimatedTransformList
 open val x: SVGAnimatedLength
 open val y: SVGAnimatedLength
 open val width: SVGAnimatedLength
 open val height: SVGAnimatedLength

 companion object {
 val SVG_UNIT_TYPE_UNKNOWN: Short
 val SVG_UNIT_TYPE_USERSPACEONUSE: Short
 val SVG_UNIT_TYPE_OBJECTBOUNDINGBOX: Short
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 }
}

public external abstract class SVGHatchElement : SVGElement {
 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
 }
}

public external abstract class SVGHatchpathElement : SVGElement {
 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING: Short
 val DOCUMENT_POSITION_FOLLOWING: Short
 val DOCUMENT_POSITION_CONTAINS: Short
 val DOCUMENT_POSITION_CONTAINED_BY: Short
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short
 }
}

```

Exposes the JavaScript [SVGCursorElement](https://developer.mozilla.org/en/docs/Web/API/SVGCursorElement) to Kotlin

```

public external abstract class SVGCursorElement : SVGElement, SVGURIReference {
 open val x: SVGAnimatedLength
 open val y: SVGAnimatedLength

 companion object {
 val ELEMENT_NODE: Short
 val ATTRIBUTE_NODE: Short
 val TEXT_NODE: Short
 val CDATA_SECTION_NODE: Short
 val ENTITY_REFERENCE_NODE: Short
 val ENTITY_NODE: Short
 val PROCESSING_INSTRUCTION_NODE: Short
 val COMMENT_NODE: Short
 val DOCUMENT_NODE: Short
 val DOCUMENT_TYPE_NODE: Short
 val DOCUMENT_FRAGMENT_NODE: Short
 val NOTATION_NODE: Short
 val DOCUMENT_POSITION_DISCONNECTED: Short
 val DOCUMENT_POSITION_PRECEDING:

```

```

Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n val
DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY: Short\n
 val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the
JavaScript [SVGScriptElement](https://developer.mozilla.org/en/docs/Web/API/SVGScriptElement) to Kotlin\n
*\npublic external abstract class SVGScriptElement : SVGElement, SVGURIReference,
HTMLOrSVGScriptElement {\n open var type: String\n open var crossOrigin: String?\n\n companion object
{\n val ELEMENT_NODE: Short\n val ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n
 val CDATA_SECTION_NODE: Short\n val ENTITY_REFERENCE_NODE: Short\n val
ENTITY_NODE: Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE:
Short\n val DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE:
Short\n val DOCUMENT_POSITION_DISCONNECTED: Short\n val
DOCUMENT_POSITION_PRECEDING: Short\n val DOCUMENT_POSITION_FOLLOWING: Short\n
 val DOCUMENT_POSITION_CONTAINS: Short\n val DOCUMENT_POSITION_CONTAINED_BY:
Short\n val DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes
the JavaScript [SVGElement](https://developer.mozilla.org/en/docs/Web/API/SVGElement) to Kotlin\n
*\npublic external abstract class SVGElement : SVGGraphicsElement, SVGURIReference {\n open val target:
SVGAnimatedString\n open val download: SVGAnimatedString\n open val rel: SVGAnimatedString\n open
val relList: SVGAnimatedString\n open val hreflang: SVGAnimatedString\n open val type:
SVGAnimatedString\n\n companion object {\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE: Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE:
Short\n val PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n/**\n * Exposes the JavaScript
[SVGViewElement](https://developer.mozilla.org/en/docs/Web/API/SVGViewElement) to Kotlin\n
*\npublic external abstract class SVGViewElement : SVGElement, SVGFitToViewBox, SVGZoomAndPan {\n companion
object {\n val SVG_ZOOMANDPAN_UNKNOWN: Short\n val SVG_ZOOMANDPAN_DISABLE:
Short\n val SVG_ZOOMANDPAN_MAGNIFY: Short\n val ELEMENT_NODE: Short\n val
ATTRIBUTE_NODE:
Short\n val TEXT_NODE: Short\n val CDATA_SECTION_NODE: Short\n val
ENTITY_REFERENCE_NODE: Short\n val ENTITY_NODE: Short\n val
PROCESSING_INSTRUCTION_NODE: Short\n val COMMENT_NODE: Short\n val
DOCUMENT_NODE: Short\n val DOCUMENT_TYPE_NODE: Short\n val
DOCUMENT_FRAGMENT_NODE: Short\n val NOTATION_NODE: Short\n val
DOCUMENT_POSITION_DISCONNECTED: Short\n val DOCUMENT_POSITION_PRECEDING: Short\n
 val DOCUMENT_POSITION_FOLLOWING: Short\n val DOCUMENT_POSITION_CONTAINS: Short\n
 val DOCUMENT_POSITION_CONTAINED_BY: Short\n val
DOCUMENT_POSITION_IMPLEMENTATION_SPECIFIC: Short\n }\n}\n\n"/\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-
GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for
details\n\npackage org.w3c.files\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport
org.w3c.dom.events.*\nimport org.w3c.xhr.*\n\n/**\n * Exposes the JavaScript

```



[Blob](https://developer.mozilla.org/en/docs/Web/API/Blob) to Kotlin\n \*^public external open class Blob(blobParts: Array<dynamic> = definedExternally, options: BlobPropertyBag = definedExternally) : MediaProvider, ImageBitmapSource {\n open val size: Number\n open val type: String\n open val isClosed: Boolean\n fun slice(start: Int = definedExternally, end: Int = definedExternally, contentType: String = definedExternally): Blob\n fun close()\n}\n\npublic external interface BlobPropertyBag {\n var type: String? /\* = \"\" \*/\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE\_REFERENCE\", \"INVISIBLE\_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun BlobPropertyBag(type: String? = \"\"): BlobPropertyBag {\n val o = js(\"({})\")\n o[\"type\"] = type\n return o\n}\n\n/\*\*\n \* Exposes the JavaScript

[File](https://developer.mozilla.org/en/docs/Web/API/File) to Kotlin\n \*^public external open class File(fileBits: Array<dynamic>, fileName: String, options: FilePropertyBag = definedExternally) : Blob {\n open val name: String\n open val lastModified: Int\n}\n\npublic external interface FilePropertyBag : BlobPropertyBag {\n var lastModified: Int?\n get() = definedExternally\n set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE\_REFERENCE\", \"INVISIBLE\_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun FilePropertyBag(lastModified: Int? = undefined, type: String? = \"\"): FilePropertyBag {\n val o = js(\"({})\")\n o[\"lastModified\"] = lastModified\n o[\"type\"] = type\n return o\n}\n\n/\*\*\n \* Exposes the JavaScript

[FileList](https://developer.mozilla.org/en/docs/Web/API/FileList) to Kotlin\n \*^public external abstract class FileList : ItemArrayLike<File> {\n override fun item(index: Int): File?\n}\n\n@Suppress(\"INVISIBLE\_REFERENCE\", \"INVISIBLE\_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline operator fun FileList.get(index: Int): File? = asDynamic()[index]\n\n/\*\*\n \* Exposes the JavaScript

[FileReader](https://developer.mozilla.org/en/docs/Web/API/FileReader) to Kotlin\n \*^public external open class FileReader : EventTarget {\n open val readyState: Short\n open val result: dynamic\n open val error: dynamic\n var onloadstart: ((ProgressEvent) -> dynamic)?\n var onprogress: ((ProgressEvent) -> dynamic)?\n var onload: ((Event) -> dynamic)?\n var onabort: ((Event) -> dynamic)?\n var onerror: ((Event) -> dynamic)?\n var onloadend: ((Event) -> dynamic)?\n fun readAsArrayBuffer(blob: Blob)\n fun readAsBinaryString(blob: Blob)\n fun readAsText(blob: Blob, label: String = definedExternally)\n fun readAsDataURL(blob: Blob)\n fun abort()\n\n companion object {\n val EMPTY: Short\n val LOADING: Short\n val DONE: Short\n }\n}\n\n/\*\*\n \* Exposes the JavaScript

[FileReaderSync](https://developer.mozilla.org/en/docs/Web/API/FileReaderSync) to Kotlin\n \*^public external open class FileReaderSync {\n fun readAsArrayBuffer(blob: Blob): ArrayBuffer\n fun readAsBinaryString(blob: Blob): String\n fun readAsText(blob: Blob, label: String = definedExternally): String\n fun readAsDataURL(blob: Blob): String\n}\n\n/\*\n \* Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n \* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n \*/\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.notifications\n\nimport kotlin.js.\*\nimport org.khronos.webgl.\*\nimport org.w3c.dom.events.\*\nimport org.w3c.workers.\*\n\n/\*\*\n \* Exposes the JavaScript

[Notification](https://developer.mozilla.org/en/docs/Web/API/Notification) to Kotlin\n \*^public external open class Notification(title: String, options: NotificationOptions = definedExternally) : EventTarget {\n var onclick: ((MouseEvent) -> dynamic)?\n var onerror: ((Event) -> dynamic)?\n open val title: String\n open val dir: NotificationDirection\n open val lang: String\n open val body: String\n open val tag: String\n open val image: String\n open val icon: String\n open val badge: String\n open val sound: String\n open val vibrate: Array<out Int>\n open val timestamp: Number\n open val renotify: Boolean\n open val silent: Boolean\n open val noscreen: Boolean\n open val requireInteraction: Boolean\n open val sticky: Boolean\n open val data: Any?\n open val actions: Array<out NotificationAction>\n fun close()\n\n companion object {\n val permission: NotificationPermission\n

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val maxActions: Int\n fun requestPermission(deprecatedCallback: (NotificationPermission)
-> Unit = definedExternally): Promise<NotificationPermission>\n }\n}\n\npublic external interface
NotificationOptions {\n var dir: NotificationDirection? /* = NotificationDirection.AUTO */\n get() =
definedExternally\n set(value) = definedExternally\n var lang: String? /* = \"\" */\n get() =
definedExternally\n set(value) = definedExternally\n var body: String? /* = \"\" */\n get() =
definedExternally\n set(value) = definedExternally\n var tag: String? /* = \"\" */\n get() =
definedExternally\n set(value) = definedExternally\n var image: String?\n get() = definedExternally\n
set(value) = definedExternally\n var icon: String?\n get() = definedExternally\n set(value) =
definedExternally\n var badge: String?\n get() = definedExternally\n set(value) = definedExternally\n
var sound: String?\n get() = definedExternally\n set(value) = definedExternally\n
 var vibrate: dynamic\n get() = definedExternally\n set(value) = definedExternally\n var timestamp:
Number?\n get() = definedExternally\n set(value) = definedExternally\n var renotify: Boolean? /* = false
/\n get() = definedExternally\n set(value) = definedExternally\n var silent: Boolean? / = false */\n
get() = definedExternally\n set(value) = definedExternally\n var noscreen: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var requireInteraction: Boolean? /* = false */\n get()
= definedExternally\n set(value) = definedExternally\n var sticky: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var data: Any? /* = null */\n get() =
definedExternally\n set(value) = definedExternally\n var actions: Array<NotificationAction>? /* = arrayOf()
*/\n get() = definedExternally\n
 set(value) = definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun NotificationOptions(dir:
NotificationDirection? = NotificationDirection.AUTO, lang: String? = \"\", body: String? = \"\", tag: String? = \"\",
image: String? = undefined, icon: String? = undefined, badge: String? = undefined, sound: String? = undefined,
vibrate: dynamic = undefined, timestamp: Number? = undefined, renotify: Boolean? = false, silent: Boolean? =
false, noscreen: Boolean? = false, requireInteraction: Boolean? = false, sticky: Boolean? = false, data: Any? = null,
actions: Array<NotificationAction>? = arrayOf()): NotificationOptions {\n val o = js(\"({})\")\n o[\"dir\"] = dir\n
o[\"lang\"] = lang\n o[\"body\"] = body\n o[\"tag\"] = tag\n o[\"image\"] = image\n o[\"icon\"] = icon\n
o[\"badge\"] = badge\n o[\"sound\"] = sound\n o[\"vibrate\"] = vibrate\n o[\"timestamp\"] = timestamp\n
 o[\"renotify\"] = renotify\n o[\"silent\"] = silent\n o[\"noscreen\"] = noscreen\n o[\"requireInteraction\"] =
requireInteraction\n o[\"sticky\"] = sticky\n o[\"data\"] = data\n o[\"actions\"] = actions\n return
o}\n}\n\npublic external interface NotificationAction {\n var action: String?\n var title: String?\n var icon:
String?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic inline fun NotificationAction(action: String?,
title: String?, icon: String? = undefined): NotificationAction {\n val o = js(\"({})\")\n o[\"action\"] = action\n
o[\"title\"] = title\n o[\"icon\"] = icon\n return o}\n}\n\npublic external interface GetNotificationOptions {\n var
tag: String? /* = \"\" */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n\n@kotlin.internal.InlineOnly\n\npublic
inline fun GetNotificationOptions(tag: String? = \"\"): GetNotificationOptions {\n val o = js(\"({})\")\n
o[\"tag\"] = tag\n return o}\n}\n\n/**\n * Exposes the JavaScript
[NotificationEvent](https://developer.mozilla.org/en/docs/Web/API/NotificationEvent) to Kotlin\n */\n\npublic
external open class NotificationEvent(type: String, eventInitDict: NotificationEventInit) : ExtendableEvent {\n
 open val notification: Notification\n open val action: String\n\n companion object {\n val NONE: Short\n
 val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n
 }\n}\n\npublic external interface NotificationEventInit : ExtendableEventInit {\n var notification: Notification?\n
var action: String? /* = \"\" */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",

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\INVISIBLE_MEMBER\)\n@kotlin.internal.InlineOnly\npublic inline fun
NotificationEventInit(notification: Notification?, action: String? = "", bubbles: Boolean? = false, cancelable:
Boolean? = false, composed: Boolean? = false): NotificationEventInit {\n val o = js\("\{\}\")\n o\["notification\"]
= notification\n o\["action\"] = action\n o\["bubbles\"] = bubbles\n o\["cancelable\"] = cancelable\n
o\["composed\"] = composed\n return o\n}\n\n/* please, don't implement this interface!
*\n@JsName("\null\")\n@Suppress("\NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface NotificationPermission {\n companion object\n}\n\npublic inline val
NotificationPermission.Companion.DEFAULT: NotificationPermission get() =
"default".asDynamic().unsafeCast<NotificationPermission>()\n\npublic inline val
NotificationPermission.Companion.DENIED: NotificationPermission get() =
"denied".asDynamic().unsafeCast<NotificationPermission>()\n\npublic inline val
NotificationPermission.Companion.GRANTED: NotificationPermission get() =
"granted".asDynamic().unsafeCast<NotificationPermission>()\n\n/*
please, don't implement this interface!
*\n@JsName("\null\")\n@Suppress("\NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface NotificationDirection {\n companion object\n}\n\npublic inline val
NotificationDirection.Companion.AUTO: NotificationDirection get() =
"auto".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.LTR: NotificationDirection get() =
"ltr".asDynamic().unsafeCast<NotificationDirection>()\n\npublic inline val
NotificationDirection.Companion.RTL: NotificationDirection get() =
"rtl".asDynamic().unsafeCast<NotificationDirection>()\n\n/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n *\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT EDIT!\n//
See github.com/kotlin/dukat for details\n\npackage
org.w3c.workers\n\nimport kotlin.js.*\nimport org.khronos.webgl.*\nimport org.w3c.dom.*\nimport
org.w3c.dom.events.*\nimport org.w3c.fetch.*\nimport org.w3c.notifications.*\n\n/**\n * Exposes the JavaScript
[ServiceWorker](https://developer.mozilla.org/en/docs/Web/API/ServiceWorker) to Kotlin\n *\n\npublic external
abstract class ServiceWorker : EventTarget, AbstractWorker, UnionMessagePortOrServiceWorker,
UnionClientOrMessagePortOrServiceWorker {\n open val scriptURL: String\n open val state:
ServiceWorkerState\n open var onstatechange: ((Event) -> dynamic)?\n fun postMessage(message: Any?,
transfer: Array<dynamic> = definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerRegistration](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerRegistration) to
Kotlin\n *\n\npublic external abstract class ServiceWorkerRegistration : EventTarget {\n open val installing:
ServiceWorker?\n open val waiting: ServiceWorker?\n open val active: ServiceWorker?\n
open val scope: String\n open var onupdatefound: ((Event) -> dynamic)?\n open val APISpace: dynamic\n
fun update(): Promise<Unit>\n fun unregister(): Promise<Boolean>\n fun showNotification(title: String,
options: NotificationOptions = definedExternally): Promise<Unit>\n fun getNotifications(filter:
GetNotificationOptions = definedExternally): Promise<Array<Notification>>\n fun methodName():
Promise<dynamic>\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerContainer](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerContainer) to Kotlin\n
*\n\npublic external abstract class ServiceWorkerContainer : EventTarget {\n open val controller:
ServiceWorker?\n open val ready: Promise<ServiceWorkerRegistration>\n open var oncontrollerchange:
((Event) -> dynamic)?\n open var onmessage: ((MessageEvent) -> dynamic)?\n fun register(scriptURL: String,
options: RegistrationOptions = definedExternally): Promise<ServiceWorkerRegistration>\n fun
getRegistration(clientURL: String = definedExternally): Promise<Any?>\n fun getRegistrations():
Promise<Array<ServiceWorkerRegistration>>\n fun startMessages()\n}\n\npublic external interface
RegistrationOptions {\n var scope: String?\n get() = definedExternally\n set(value) = definedExternally\n

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var type: WorkerType? /* = WorkerType.CLASSIC */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun RegistrationOptions(scope: String? =
undefined, type: WorkerType? = WorkerType.CLASSIC): RegistrationOptions {\n val o = js(\"({})\")\n o[\"scope\"] = scope\n o[\"type\"] = type\n return o\n}\n\n/**\n * Exposes the JavaScript
[ServiceWorkerMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerMessageEvent) to
Kotlin\n\n */\npublic external open class ServiceWorkerMessageEvent(type: String, eventInitDict:
ServiceWorkerMessageEventInit
= definedExternally) : Event {\n open val data: Any?\n open val origin: String\n open val lastEventId: String\n
open val source: UnionMessagePortOrServiceWorker?\n open val ports: Array<out MessagePort>?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET:
Short\n val BUBBLING_PHASE: Short\n }\n\n public external interface ServiceWorkerMessageEventInit :
EventInit {\n var data: Any?\n get() = definedExternally\n set(value) = definedExternally\n var origin:
String?\n get() = definedExternally\n set(value) = definedExternally\n var lastEventId: String?\n get()
= definedExternally\n set(value) = definedExternally\n var source: UnionMessagePortOrServiceWorker?\n
get() = definedExternally\n set(value) = definedExternally\n var ports: Array<MessagePort>?\n get() =
definedExternally\n set(value) = definedExternally\n }\n\n @Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n @kotlin.internal.InlineOnly\n public inline fun ServiceWorkerMessageEventInit(data:
Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source:
UnionMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>? = undefined, bubbles: Boolean? =
false, cancelable: Boolean? = false, composed: Boolean? = false): ServiceWorkerMessageEventInit {\n val o =
js(\"({})\")\n o[\"data\"] = data\n o[\"origin\"] = origin\n o[\"lastEventId\"] = lastEventId\n o[\"source\"] =
source\n o[\"ports\"] = ports\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] =
composed\n return o\n }\n\n /**\n * Exposes the JavaScript
[ServiceWorkerGlobalScope](https://developer.mozilla.org/en/docs/Web/API/ServiceWorkerGlobalScope) to
Kotlin\n\n */\n public external abstract class ServiceWorkerGlobalScope : WorkerGlobalScope {\n open val clients:
Clients\n
 open val registration: ServiceWorkerRegistration\n open var oninstall: ((Event) -> dynamic)?\n open var
onactivate: ((Event) -> dynamic)?\n open var onfetch: ((FetchEvent) -> dynamic)?\n open var onforeignfetch:
((Event) -> dynamic)?\n open var onmessage: ((MessageEvent) -> dynamic)?\n open var onnotificationclick:
((NotificationEvent) -> dynamic)?\n open var onnotificationclose: ((NotificationEvent) -> dynamic)?\n open var
onfunctionalevent: ((Event) -> dynamic)?\n fun skipWaiting(): Promise<Unit>\n }\n\n /**\n * Exposes the
JavaScript [Client](https://developer.mozilla.org/en/docs/Web/API/Client) to Kotlin\n\n */\n public external abstract
class Client : UnionClientOrMessagePortOrServiceWorker {\n open val url: String\n open val frameType:
FrameType\n open val id: String\n fun postMessage(message: Any?, transfer: Array<dynamic> =
definedExternally)\n }\n\n /**\n * Exposes the JavaScript
[WindowClient](https://developer.mozilla.org/en/docs/Web/API/WindowClient)
to Kotlin\n\n */\n public external abstract class WindowClient : Client {\n open val visibilityState: dynamic\n open
val focused: Boolean\n fun focus(): Promise<WindowClient>\n fun navigate(url: String):
Promise<WindowClient>\n }\n\n /**\n * Exposes the JavaScript
[Clients](https://developer.mozilla.org/en/docs/Web/API/Clients) to Kotlin\n\n */\n public external abstract class
Clients {\n fun get(id: String): Promise<Any?>\n fun matchAll(options: ClientQueryOptions =
definedExternally): Promise<Array<Client>>\n fun openWindow(url: String): Promise<WindowClient?>\n fun
claim(): Promise<Unit>\n }\n\n public external interface ClientQueryOptions {\n var includeUncontrolled:
Boolean? /* = false */\n get() = definedExternally\n set(value) = definedExternally\n var type:
ClientType? /* = ClientType.WINDOW */\n get() = definedExternally\n set(value) =
definedExternally\n }\n\n @Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n @kotlin.internal.InlineOnly\n public

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inline fun ClientQueryOptions(includeUncontrolled: Boolean? = false, type: ClientType? = ClientType.WINDOW):
ClientQueryOptions {\n val o = js("{}")\n o["includeUncontrolled"] = includeUncontrolled\n o["type"] =
type\n return o\n}\n\n/**\n * Exposes the JavaScript
[ExtendableEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableEvent) to Kotlin\n *\npublic external
open class ExtendableEvent(type: String, eventInitDict: ExtendableEventInit = definedExternally) : Event {\n fun
waitUntil(f: Promise<Any?>)\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE:
Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
ExtendableEventInit : EventInit\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ExtendableEventInit(bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean?
= false): ExtendableEventInit {\n val o = js("{}")\n o["bubbles"] = bubbles\n o["cancelable"] =
cancelable\n o["composed"] = composed\n return o\n}\n\n/**\n * Exposes the JavaScript
[InstallEvent](https://developer.mozilla.org/en/docs/Web/API/InstallEvent) to Kotlin\n *\npublic external open
class InstallEvent(type: String, eventInitDict: ExtendableEventInit = definedExternally) : ExtendableEvent {\n fun
registerForeignFetch(options: ForeignFetchOptions)\n\n companion object {\n val NONE: Short\n val
CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface ForeignFetchOptions {\n var scopes: Array<String>?\n var origins:
Array<String>?\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchOptions(scopes:
Array<String>?, origins: Array<String>?): ForeignFetchOptions {\n val o = js("{}")\n
o["scopes"] = scopes\n o["origins"] = origins\n return o\n}\n\n/**\n * Exposes the JavaScript
[FetchEvent](https://developer.mozilla.org/en/docs/Web/API/FetchEvent) to Kotlin\n *\npublic external open class
FetchEvent(type: String, eventInitDict: FetchEventInit) : ExtendableEvent {\n open val request: Request\n open
val clientId: String?\n open val isReload: Boolean\n fun respondWith(r: Promise<Response>)\n\n companion
object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface FetchEventInit : ExtendableEventInit {\n var
request: Request?\n var clientId: String? /* = null */\n get() = definedExternally\n set(value) =
definedExternally\n var isReload: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic
inline fun FetchEventInit(request: Request?, clientId: String? = null, isReload: Boolean? = false, bubbles: Boolean?
= false, cancelable: Boolean? = false, composed: Boolean? = false): FetchEventInit {\n val o = js("{}")\n
o["request"] = request\n o["clientId"] = clientId\n o["isReload"] = isReload\n o["bubbles"] = bubbles\n
o["cancelable"] = cancelable\n o["composed"] = composed\n return o\n}\n\npublic external open class
ForeignFetchEvent(type: String, eventInitDict: ForeignFetchEventInit) : ExtendableEvent {\n open val request:
Request\n open val origin: String\n fun respondWith(r: Promise<ForeignFetchResponse>)\n\n companion
object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET: Short\n val
BUBBLING_PHASE: Short\n }\n}\n\npublic external interface ForeignFetchEventInit : ExtendableEventInit {\n
var request: Request?\n var origin: String? /* = \"null\"
*/\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchEventInit(request:
Request?, origin: String? = \"null\", bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? =
false): ForeignFetchEventInit {\n val o = js("{}")\n o["request"] = request\n o["origin"] = origin\n
o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return
o\n}\n\npublic external interface ForeignFetchResponse {\n var response: Response?\n var origin: String?\n
get() = definedExternally\n set(value) = definedExternally\n var headers: Array<String>?\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",

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\@kotlin.internal.InlineOnly\npublic inline fun ForeignFetchResponse(response:
Response?,
 origin: String? = undefined, headers: Array<String>? = undefined): ForeignFetchResponse {\n val o =
js("{}")\n o["response"] = response\n o["origin"] = origin\n o["headers"] = headers\n return
o}\n\n/**\n * Exposes the JavaScript
[ExtendableMessageEvent](https://developer.mozilla.org/en/docs/Web/API/ExtendableMessageEvent) to Kotlin\n
*\npublic external open class ExtendableMessageEvent(type: String, eventInitDict: ExtendableMessageEventInit =
definedExternally) : ExtendableEvent {\n open val data: Any?\n open val origin: String\n open val lastEventId:
String\n open val source: UnionClientOrMessagePortOrServiceWorker?\n open val ports: Array<out
MessagePort>?\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val
AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n\npublic external interface
ExtendableMessageEventInit : ExtendableEventInit {\n var data: Any?\n get() =
definedExternally\n set(value) = definedExternally\n var origin: String?\n get() = definedExternally\n
set(value) = definedExternally\n var lastEventId: String?\n get() = definedExternally\n set(value) =
definedExternally\n var source: UnionClientOrMessagePortOrServiceWorker?\n get() = definedExternally\n
set(value) = definedExternally\n var ports: Array<MessagePort>?\n get() = definedExternally\n
set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun ExtendableMessageEventInit(data:
Any? = undefined, origin: String? = undefined, lastEventId: String? = undefined, source:
UnionClientOrMessagePortOrServiceWorker? = undefined, ports: Array<MessagePort>? = undefined, bubbles:
Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false): ExtendableMessageEventInit {\n
val o = js("{}")\n o["data"] = data\n
 o["origin"] = origin\n o["lastEventId"] = lastEventId\n o["source"] = source\n o["ports"] = ports\n
o["bubbles"] = bubbles\n o["cancelable"] = cancelable\n o["composed"] = composed\n return
o}\n\n/**\n * Exposes the JavaScript [Cache](https://developer.mozilla.org/en/docs/Web/API/Cache) to Kotlin\n
*\npublic external abstract class Cache {\n fun match(request: dynamic, options: CacheQueryOptions =
definedExternally): Promise<Any?>\n fun matchAll(request: dynamic = definedExternally, options:
CacheQueryOptions = definedExternally): Promise<Array<Response>>\n fun add(request: dynamic):
Promise<Unit>\n fun addAll(requests: Array<dynamic>): Promise<Unit>\n fun put(request: dynamic, response:
Response): Promise<Unit>\n fun delete(request: dynamic, options: CacheQueryOptions = definedExternally):
Promise<Boolean>\n fun keys(request: dynamic = definedExternally, options: CacheQueryOptions =
definedExternally): Promise<Array<Request>>\n}\n\npublic
external interface CacheQueryOptions {\n var ignoreSearch: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var ignoreMethod: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var ignoreVary: Boolean? /* = false */\n get() =
definedExternally\n set(value) = definedExternally\n var cacheName: String?\n get() =
definedExternally\n set(value) = definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CacheQueryOptions(ignoreSearch:
Boolean? = false, ignoreMethod: Boolean? = false, ignoreVary: Boolean? = false, cacheName: String? = undefined):
CacheQueryOptions {\n val o = js("{}")\n o["ignoreSearch"] = ignoreSearch\n o["ignoreMethod"] =
ignoreMethod\n o["ignoreVary"] = ignoreVary\n o["cacheName"] = cacheName\n return o}\n\npublic
external
interface CacheBatchOperation {\n var type: String?\n get() = definedExternally\n set(value) =
definedExternally\n var request: Request?\n get() = definedExternally\n set(value) = definedExternally\n
var response: Response?\n get() = definedExternally\n set(value) = definedExternally\n var options:
CacheQueryOptions?\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\n@kotlin.internal.InlineOnly\npublic inline fun CacheBatchOperation(type: String? =

```

```

undefined, request: Request? = undefined, response: Response? = undefined, options: CacheQueryOptions? =
undefined): CacheBatchOperation {\n val o = js("{}")\n o["type"] = type\n o["request"] = request\n
o["response"] = response\n o["options"] = options\n return o\n}\n\n/**\n * Exposes the JavaScript
[CacheStorage](https://developer.mozilla.org/en/docs/Web/API/CacheStorage)
to Kotlin\n */\npublic external abstract class CacheStorage {\n fun match(request: dynamic, options:
CacheQueryOptions = definedExternally): Promise<Any?>\n fun has(cacheName: String): Promise<Boolean>\n
fun open(cacheName: String): Promise<Cache>\n fun delete(cacheName: String): Promise<Boolean>\n fun
keys(): Promise<Array<String>>\n}\n\npublic external open class FunctionalEvent : ExtendableEvent {\n
companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val AT_TARGET:
Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface
UnionMessagePortOrServiceWorker\n\npublic external interface
UnionClientOrMessagePortOrServiceWorker\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ServiceWorkerState {\n companion object\n}\n\npublic inline val
ServiceWorkerState.Companion.INSTALLING: ServiceWorkerState get() =
"installing".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic inline val
ServiceWorkerState.Companion.INSTALLED: ServiceWorkerState get() =
"installed".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic inline val
ServiceWorkerState.Companion.ACTIVATING: ServiceWorkerState get() =
"activating".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic inline val
ServiceWorkerState.Companion.ACTIVATED: ServiceWorkerState get() =
"activated".asDynamic().unsafeCast<ServiceWorkerState>()\n\npublic inline val
ServiceWorkerState.Companion.REDUNDANT: ServiceWorkerState get() =
"redundant".asDynamic().unsafeCast<ServiceWorkerState>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface FrameType {\n companion object\n}\n\npublic inline val FrameType.Companion.AUXILIARY:
FrameType get() = "auxiliary".asDynamic().unsafeCast<FrameType>()\n\npublic inline val
FrameType.Companion.TOP_LEVEL:
FrameType get() = "top-level".asDynamic().unsafeCast<FrameType>()\n\npublic inline val
FrameType.Companion.NESTED: FrameType get() = "nested".asDynamic().unsafeCast<FrameType>()\n\npublic
inline val FrameType.Companion.NONE: FrameType get() =
"none".asDynamic().unsafeCast<FrameType>()\n\n/* please, don't implement this interface!
*\n@JsName("null")\n@Suppress("NESTED_CLASS_IN_EXTERNAL_INTERFACE")\npublic external
interface ClientType {\n companion object\n}\n\npublic inline val ClientType.Companion.WINDOW: ClientType
get() = "window".asDynamic().unsafeCast<ClientType>()\n\npublic inline val ClientType.Companion.WORKER:
ClientType get() = "worker".asDynamic().unsafeCast<ClientType>()\n\npublic inline val
ClientType.Companion.SHAREDWORKER: ClientType get() =
"sharedworker".asDynamic().unsafeCast<ClientType>()\n\npublic inline val ClientType.Companion.ALL:
ClientType get() = "all".asDynamic().unsafeCast<ClientType>()"/**\n * Copyright 2010-2021 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n */\n\n// NOTE: THIS FILE IS AUTO-GENERATED, DO NOT
EDIT!\n// See github.com/kotlin/dukat for details\n\npackage org.w3c.xhr\n\nimport kotlin.js.*\nimport
org.khronos.webgl.*\nimport org.w3c.dom.*\nimport org.w3c.dom.events.*\nimport org.w3c.files.*\n\n/**\n *
Exposes the JavaScript
[XMLHttpRequestEventTarget](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequestEventTarget) to
Kotlin\n */\npublic external abstract class XMLHttpRequestEventTarget : EventTarget {\n open var onloadstart:
((ProgressEvent) -> dynamic)?\n open var onprogress: ((ProgressEvent) -> dynamic)?\n open var onabort:
((Event) -> dynamic)?\n open var onerror: ((Event) -> dynamic)?\n open var onload: ((Event) -> dynamic)?\n

```

```

open var ontimeout: ((Event) -> dynamic)?\n open var onloadend: ((Event) -> dynamic)?\n}\n\npublic external
abstract class XMLHttpRequestUpload : XMLHttpRequestEventTarget\n/**\n * Exposes the JavaScript
[XMLHttpRequest](https://developer.mozilla.org/en/docs/Web/API/XMLHttpRequest) to Kotlin\n */\npublic
external open class XMLHttpRequest : XMLHttpRequestEventTarget {\n var onreadystatechange: ((Event) ->
dynamic)?\n open val readyState: Short\n var timeout: Int\n var withCredentials: Boolean\n open val upload:
XMLHttpRequestUpload\n open val responseURL: String\n open val status: Short\n open val statusText:
String\n var responseType: XMLHttpRequestResponseType\n open val response: Any?\n open val
responseText: String\n open val responseXML: Document?\n fun open(method: String, url: String)\n fun
open(method: String, url: String, async: Boolean, username: String? = definedExternally, password: String? =
definedExternally)\n fun setRequestHeader(name: String, value: String)\n fun send(body: dynamic =
definedExternally)\n fun abort()\n
 fun getResponseHeader(name: String): String?\n fun getAllResponseHeaders(): String\n fun
overrideMimeType(mime: String)\n\n companion object {\n val UNSENT: Short\n val OPENED: Short\n
 val HEADERS_RECEIVED: Short\n val LOADING: Short\n val DONE: Short\n }\n}\n/**\n *
Exposes the JavaScript [FormData](https://developer.mozilla.org/en/docs/Web/API/FormData) to Kotlin\n
*/\npublic external open class FormData(form: HTMLFormElement = definedExternally) {\n fun append(name:
String, value: String)\n fun append(name: String, value: Blob, filename: String = definedExternally)\n fun
delete(name: String)\n fun get(name: String): dynamic\n fun getAll(name: String): Array<dynamic>\n fun
has(name: String): Boolean\n fun set(name: String, value: String)\n fun set(name: String, value: Blob, filename:
String = definedExternally)\n}\n\n/**\n * Exposes the JavaScript
[ProgressEvent](https://developer.mozilla.org/en/docs/Web/API/ProgressEvent)
to Kotlin\n */\npublic external open class ProgressEvent(type: String, eventInitDict: ProgressEventInit =
definedExternally) : Event {\n open val lengthComputable: Boolean\n open val loaded: Number\n open val
total: Number\n\n companion object {\n val NONE: Short\n val CAPTURING_PHASE: Short\n val
AT_TARGET: Short\n val BUBBLING_PHASE: Short\n }\n}\n\npublic external interface ProgressEventInit
: EventInit {\n var lengthComputable: Boolean? /* = false */\n get() = definedExternally\n set(value) =
definedExternally\n var loaded: Number? /* = 0 */\n get() = definedExternally\n set(value) =
definedExternally\n var total: Number? /* = 0 */\n get() = definedExternally\n set(value) =
definedExternally\n}\n\n@Suppress(\"INVISIBLE_REFERENCE\",
\"INVISIBLE_MEMBER\")\n@kotlin.internal.InlineOnly\npublic inline fun ProgressEventInit(lengthComputable:
Boolean? = false, loaded: Number? = 0, total:
Number? = 0, bubbles: Boolean? = false, cancelable: Boolean? = false, composed: Boolean? = false):
ProgressEventInit {\n val o = js(\"({})\")\n o[\"lengthComputable\"] = lengthComputable\n o[\"loaded\"] =
loaded\n o[\"total\"] = total\n o[\"bubbles\"] = bubbles\n o[\"cancelable\"] = cancelable\n o[\"composed\"] =
composed\n return o\n}\n\n/* please, don't implement this interface!
*/\n@JsName(\"null\")\n@Suppress(\"NESTED_CLASS_IN_EXTERNAL_INTERFACE\")\npublic external
interface XMLHttpRequestResponseType {\n companion object\n}\n\npublic inline val
XMLHttpRequestResponseType.Companion.EMPTY: XMLHttpRequestResponseType get() =
\"\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.ARRAYBUFFER: XMLHttpRequestResponseType get() =
\"arraybuffer\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.BLOB: XMLHttpRequestResponseType get() =
\"blob\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic
inline val XMLHttpRequestResponseType.Companion.DOCUMENT: XMLHttpRequestResponseType get() =
\"document\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.JSON: XMLHttpRequestResponseType get() =
\"json\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()\n\npublic inline val
XMLHttpRequestResponseType.Companion.TEXT: XMLHttpRequestResponseType get() =

```



```

\"text\".asDynamic().unsafeCast<XMLHttpRequestResponseType>()","package kotlin\n\nimport
kotlin.annotation.AnnotationTarget.*\n\n/**\n * This annotation marks the standard library API that is considered
experimental and is not subject to the\n * [general compatibility
guarantees](https://kotlinlang.org/docs/reference/evolution/components-stability.html) given for the standard
library:\n * the behavior of such API may be changed or the API may be removed completely in any further
release.\n *\n * > Beware
using the annotated API especially if you're developing a library, since your library might become binary
incompatible\n * with the future versions of the standard library.\n *\n * Any usage of a declaration annotated with
`@ExperimentalStdlibApi` must be accepted either by\n * annotating that usage with the [OptIn] annotation, e.g.
`@OptIn(ExperimentalStdlibApi::class)`,\n * or by using the compiler argument `-opt-
in=kotlin.ExperimentalStdlibApi`. \n *\n @RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n @Retention(AnnotationRetention.BINARY)\n @Target(\n CLASS,\n
ANNOTATION_CLASS,\n PROPERTY,\n FIELD,\n LOCAL_VARIABLE,\n VALUE_PARAMETER,\n
CONSTRUCTOR,\n FUNCTION,\n PROPERTY_GETTER,\n PROPERTY_SETTER,\n
TYPEALIAS)\n\n @MustBeDocumented\n @SinceKotlin("1.3")\n\n public annotation class
ExperimentalStdlibApi\n", "/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0
license that can be found in the license/LICENSE.txt file.\n *\n\n package kotlin\n\n import
kotlin.annotation.AnnotationTarget.*\n\n import kotlin.experimental.ExperimentalTypeInference\n\n\n /**\n * Allows to
infer generic type arguments of a function from the calls in the annotated function parameter of that function.\n *\n *
When this annotation is placed on a generic function parameter of a function,\n * it enables to infer the type
arguments of that generic function from the lambda body passed to that parameter.\n *\n * The calls that affect
inference are either members of the receiver type of an annotated function parameter or\n * extensions for that type.
The extensions must be themselves annotated with `@BuilderInference`. \n *\n * Example: we declare\n * ```\n * fun
<T> sequence(@BuilderInference block: suspend SequenceScope<T>().() -> Unit): Sequence<T>\n * ```\n * and use
it like\n * ```\n * val result = sequence { yield("result") }\n * ```\n * Here the type argument of the resulting
sequence is inferred to `String` from\n * the argument of the [SequenceScope.yield] function, that is called inside
the lambda passed to [sequence].\n *\n * Note: this annotation is experimental, see [ExperimentalTypeInference] on
how to opt-in for it.\n *\n @Target(VALUE_PARAMETER, FUNCTION,
PROPERTY)\n @Retention(AnnotationRetention.BINARY)\n @SinceKotlin("1.3")\n @ExperimentalTypeInferenc
e\n\n public annotation class BuilderInference\n\n\n /**\n * Enables overload selection based on the type of the value
returned from lambda argument.\n *\n * When two or more function overloads have otherwise the same parameter
lists that differ only in the return type\n * of a functional parameter, this annotation enables overload selection by the
type of the value returned from\n * the lambda function passed to this functional parameter.\n *\n * Example:\n *
```\n * @OverloadResolutionByLambdaReturnType\n * fun create(intProducer: () -> Int): Int\n * fun
create(doubleProducer: () -> Double): Double\n
*\n * val newValue = create { 3.14 }\n * ```\n *\n * The annotation being applied to one of overloads allows to
resolve this ambiguity by analyzing what value is returned\n * from the lambda function.\n *\n * This annotation is
also used to discriminate the annotated overloads in case if overload selection still cannot\n * choose one of them
even taking in account the result of lambda parameter analysis. In that case a warning is reported.\n *\n * Note: this
annotation is experimental, see [ExperimentalTypeInference] on how to opt-in for it.\n
*\n @Target(FUNCTION)\n @Retention(AnnotationRetention.BINARY)\n @SinceKotlin("1.4")\n @Experimental
TypeInference\n\n public annotation class OverloadResolutionByLambdaReturnType", "/*\n * Copyright 2010-2018
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\n package kotlin\n\n import
kotlin.annotation.AnnotationTarget.*\n\n import
kotlin.internal.RequireKotlin\n\n import kotlin.internal.RequireKotlinVersionKind\n\n\n /**\n * The experimental
multiplatform support API marker.\n *\n * Any usage of a declaration annotated with

```

`@ExperimentalMultiplatform` must be accepted either by `opt-in` annotation, e.g. `@OptIn(ExperimentalMultiplatform::class)`, or by using the compiler argument `-opt-in=kotlin.ExperimentalMultiplatform`.

`@RequiresOptIn`, `@MustBeDocumented`, `@Target` (CLASS, ANNOTATION_CLASS, PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER, TYPEALIAS), `@Retention` (AnnotationRetention.BINARY) public annotation class

`ExperimentalMultiplatform` Marks an expected annotation class that it isn't required to have actual counterparts in all platforms. This annotation is only applicable to `expect` annotation classes in multiplatform projects and marks that class as "optional". Optional expected class is allowed to have no corresponding actual class on the platform. Optional annotations can only be used to annotate something, not as types in signatures. If an optional annotation has no corresponding actual class on a platform, the annotation entries where it's used are simply erased when compiling code on that platform. Note: this annotation is experimental, see [ExperimentalMultiplatform] on how to opt-in for it.

```

@Target(ANNOTATION_CLASS)
@Retention(AnnotationRetention.BINARY)
@ExperimentalMultiplatform
public annotation class OptionalExpectation {
}

```

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```

package kotlin.annotation
import kotlin.annotation.AnnotationTarget.*
import kotlin.reflect.KClass

```

Signals that the annotated annotation class is a marker of an API that requires an explicit `opt-in`. Call sites of any declaration that is either annotated with such a marker or mentions in its signature any other declaration that requires `opt-in` should opt in to the API either by using `[OptIn]` or by being annotated with that marker themselves, effectively causing further propagation of the `opt-in` requirement. The intended uses of `opt-in` markers include, but are not limited to the following:

- Experimental API for public preview that might change its semantics or affect binary compatibility.
- Internal declarations that should not be used outside the declaring library, but are `public` for technical reasons.
- Fragile or delicate API that needs a lot of expertise to use and thus require an explicit `opt-in`.

Contagiousness When a declaration is marked with an `opt-in` requirement, it is considered to be contagious, meaning that all its uses or mentions in other declarations will require an explicit `opt-in`. A rule of thumb for propagating is the following: if the marked declaration ceases to exist, only the places with explicit `opt-in` (or the corresponding warning) will break. This rule does not imply transitivity, e.g. the propagation does not propagate `opt-in` through inlining, making it the responsibility of the `inline` function author to mark it properly.

Type scopes A type is considered requiring `opt-in` if it is marked with an `opt-in` marker, or the outer declaration (class or interface) requires `opt-in`. Any use of any declaration that mentions such type in its signature will require an explicit `opt-in`, even if it is not used directly on the call site, and even if such declarations do not require `opt-in` directly. For example, consider the following declarations that are marked with non-propagating `opt-in`:

```

@UnstableApi
class Unstable {
    @OptIn(UnstableApi::class)
    fun foo(): Unstable = Unstable()
}
@OptIn(UnstableApi::class)
fun bar(arg: Unstable = Unstable()) {}
@OptIn(UnstableApi::class)
fun Unstable?.baz() {}

```

and their respective call sites:

```

fun outerFun() {
    val s = foo()
    bar()
    null.baz()
}

```

Even though call sites do not mention `Unstable` type directly, the corresponding `opt-in` warning or error will be triggered in each call site due to propagation contagiousness. Note that the propagation is not transitive, i.e. calls to `outerFun` itself would not trigger any further `opt-in` requirements.

Lexical scopes If a type requires an `opt-in`, such requirement is propagated to its lexical scope and all its nested declarations. For example, for the following scope:

```

@UnstableApi
class Unstable {
    fun memberFun() = ...
    class NestedClass {
        fun nestedFun()
    }
}

```

= ...
 }
 Any use of `Unstable`, `NestedClass`, or their member functions will require an explicit `opt-in`.
 Overridden declarations
 Opt-in markers are also propagated through the inheritance and interface implementation.
 If the base declaration requires an `opt-in`, overriding it requires either an explicit `opt-in` or propagating the `opt-in` requirement.
 See also [Kotlin language documentation](https://kotlinlang.org/docs/opt-in-requirements.html) for more information.
 @property message message to be reported on usages of API without an explicit `opt-in`, or empty string for the default message.
 The default message is: `"This declaration is experimental and its usage should be marked with 'Marker' or '@OptIn(Marker::class)'"`, where `Marker` is the `opt-in` requirement marker.
 @property level specifies how usages of API without an explicit `opt-in` are reported in code.
 @Target(ANNOTATION_CLASS)
 @Retention(BINARY)
 @SinceKotlin("1.3")
 public annotation class RequiresOptIn(val message: String = "", val level: Level = Level.ERROR) {
 /**
 * Severity of the diagnostic that should be reported on usages which did not explicitly opt into the API either by using [OptIn] or by being annotated with the corresponding marker annotation.
 public enum class Level {
 /**
 * Specifies that a warning should be reported on incorrect usages of this API.
 WARNING,
 /**
 * Specifies that a compilation error should be reported on incorrect usages of this API.
 ERROR,
 }
 }
 /**
 * Allows to use the API denoted by the given markers in the annotated file, declaration, or expression.
 If a declaration is annotated with [OptIn], its usages are `not` required to opt in to that API.
 [markerClass] specifies marker annotations that require explicit `opt-in`. The marker annotation is `not` required to be itself marked with [RequiresOptIn] to enable gradual migration of API from requiring `opt-in` to the regular one, yet declaring such `OptIn` yields a compilation warning.
 See also [Kotlin language documentation](https://kotlinlang.org/docs/opt-in-requirements.html) for more information.
 @property markerClass specifies marker annotations that require explicit `opt-in`.
 @see RequiresOptIn for a detailed description of `opt-in` semantics and propagation rules.
 @Target(CLASS, PROPERTY, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER, EXPRESSION, FILE, TYPEALIAS)
 @Retention(SOURCE)
 @SinceKotlin("1.3")
 public annotation class OptIn(vararg val markerClass: KClass<out Annotation>)
 /**
 * This annotation marks the experimental preview of the language feature [SubclassOptInRequired].
 > Note that this API is in a preview state and has a chance of being changed in the future.
 Do not use it if you develop a library since your library can become source incompatible with the future versions of Kotlin.
 @Target(CLASS)
 @Retention(BINARY)
 @SinceKotlin("1.8")
 public annotation class ExperimentalSubclassOptIn
 /**
 * Annotation that marks open for subclassing classes and interfaces, and makes implementation and extension of such declarations as requiring an explicit `opt-in`.
 When applied, any attempt to subclass the target declaration will trigger an `opt-in` with the corresponding level and message.
 The intended uses of subclass `opt-in` markers include, but are not limited to the following API:
 - Stable to use, but unstable to implement due to its further evolution.
 - Stable to use, but closed for 3rd-part implementations due to internal or technical reasons.
 - Stable to use, but delicate or fragile to implement.
 - Stable to use, but with a contract that may be weakened in the future in a backwards-incompatible manner for external implementations.
 Contrary to regular [RequiresOptIn], there are three ways to `opt-in` into the subclassing requirement:
 - Annotate declaration with the marker annotation, making it propagating.
 - Annotate declaration with [OptIn] in order to opt in into the provided guarantees in a non-propagating manner.
 - Annotate declaration with [SubclassOptInRequired] with the same marker class, making it further propagating only for subclassing.
 Uses of this annotation are limited to open and abstract classes, and non-`fun` interfaces.
 Any other uses allowed by `CLASS` annotation target yield a compilation error.
 @property markerClass specifies marker annotation that require explicit `opt-in`.
 @see RequiresOptIn for a detailed description of `opt-in` semantics and propagation rules.
 @Target(CLASS)
 @Retention(BINARY)
 @SinceKotlin("1.8")
 @ExperimentalSubclassOptIn
 public

```

annotation class SubclassOptInRequired(\n
    val markerClass: KClass<out Annotation>\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport
kotlin.annotation.AnnotationRetention.BINARY\nimport kotlin.annotation.AnnotationTarget.*\nimport
kotlin.reflect.KClass\n\n\n@Target(CLASS, PROPERTY, CONSTRUCTOR, FUNCTION,
TYPEALIAS)\n@Retention(BINARY)\ninternal annotation class WasExperimental(\n    vararg val markerClass:
KClass<out Annotation>\n)\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\nimport kotlin.js.JsName\n\n/**\n * Provides a skeletal
implementation of the read-only [Collection] interface.\n */\n * @param E the type of elements contained
in the collection. The collection is covariant in its element type.\n */\n@SinceKotlin("1.1")\npublic abstract class
AbstractCollection<out E> protected constructor() : Collection<E> {\n    abstract override val size: Int\n    abstract
override fun iterator(): Iterator<E>\n\n    override fun contains(element: @UnsafeVariance E): Boolean = any { it
== element }\n\n    override fun containsAll(elements: Collection<@UnsafeVariance E>): Boolean =\n        elements.all { contains(it) } // use when js will support bound refs: elements.all(this::contains)\n\n    override fun
isEmpty(): Boolean = size == 0\n\n    override fun toString(): String = joinToString(", ", "[", "]") {\n        if (it
=== this) "(this Collection)" else it.toString()\n    }\n\n    /**\n     * Returns new array of type `Array<Any?>` with
the elements of this collection.\n     */\n     @JsName("toArray")\n     protected open fun toArray(): Array<Any?> =
copyToArrayImpl(this)\n\n     /**\n     * Fills the provided
[array] or creates new array of the same type\n     */\n     and fills it with the elements of this collection.\n     */\n     and
fills it with the elements of this collection.\n     */\n     protected open fun <T> toArray(array: Array<T>): Array<T> =
copyToArrayImpl(this, array)\n}\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\nprivate enum class State {\n    Ready,\n    NotReady,\n    Done,\n    Failed\n}\n\n/**\n * A
base class to simplify implementing iterators so that implementations only have to implement [computeNext]\n */\n * to
implement the iterator, calling [done] when the iteration is complete.\n */\n\npublic abstract class AbstractIterator<T>
: Iterator<T> {\n    private var state = State.NotReady\n    private var nextValue: T? = null\n\n    override fun
hasNext(): Boolean {\n        require(state != State.Failed)\n        return when (state) {\n
            State.Done -> false\n            State.Ready -> true\n            else -> tryToComputeNext()\n        }\n    }\n\n    override fun next(): T {\n        if (!hasNext()) throw NoSuchElementException()\n        state = State.NotReady\n
@Suppress("UNCHECKED_CAST")\n        return nextValue as T\n    }\n\n    private fun tryToComputeNext():
Boolean {\n        state = State.Failed\n        computeNext()\n        return state == State.Ready\n    }\n\n    /**\n     *
Computes the next item in the iterator.\n     */\n     * This callback method should call one of these two methods:\n     *\n     * * [setNext] with the next value of the iteration\n     * * [done] to indicate there are no more elements\n     *\n     * Failure to call either method will result in the iteration terminating with a failed state\n     */\n     abstract
protected fun computeNext(): Unit\n\n     /**\n     * Sets the next value in the iteration, called from the
[computeNext] function\n     */\n     protected
fun setNext(value: T): Unit {\n        nextValue = value\n        state = State.Ready\n    }\n\n     /**\n     * Sets the state
to done so that the iteration terminates.\n     */\n     protected fun done() {\n        state = State.Done\n
}\n}\n\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.collections\n\n/**\n * Based on GWT AbstractList\n */\n * Copyright 2007 Google Inc.\n */\n\npackage kotlin.collections\n\n/**\n * Provides a skeletal implementation of the read-only [List] interface.\n */\n * This class is intended to help
implementing read-only lists so it doesn't support concurrent modification tracking.\n */\n * @param E the type of
elements contained in the list. The list is covariant in its element type.\n */\n@SinceKotlin("1.1")\npublic abstract
class AbstractList<out E> protected constructor() : AbstractCollection<E>(),

```



```

protected constructor() : Map<K, V> {\n\n  override fun containsKey(key: K): Boolean {\n    return
implFindEntry(key) != null\n  }\n\n  override fun containsValue(value: @UnsafeVariance V): Boolean =
entries.any { it.value == value }\n\n  internal fun containsEntry(entry: Map.Entry<*, *>): Boolean {\n    // since
entry comes from @UnsafeVariance parameters it can be virtually anything\n    if (entry !is Map.Entry<*, *>)
return false\n    val key = entry.key\n    val value = entry.value\n    val ourValue = get(key)\n\n    if (value != ourValue) {\n      return false\n    }\n\n    // Perhaps it was null and we don't contain the
key?\n    if (ourValue == null && !containsKey(key)) {\n      return false\n    }\n\n    return true\n  }\n\n\n  /**\n   * Compares this map with other instance with the ordered structural equality.\n   * @return
true, if [other] instance is a [Map] of the same size, all entries of which are contained in the [entries] set of this
map.\n   */\n  override fun equals(other: Any?): Boolean {\n    if (other === this) return true\n    if (other !is
Map<*, *>) return false\n    if (size != other.size) return false\n\n    return other.entries.all { containsEntry(it)
}\n  }\n\n  override operator fun get(key: K): V? = implFindEntry(key)?.value\n\n  /**\n   * Returns the hash
code value for this map.\n   * It is the same as the hashCode of [entries] set.\n   */\n  override fun
hashCode():

Int = entries.hashCode()\n\n  override fun isEmpty(): Boolean = size == 0\n  override val size: Int get() =
entries.size\n\n  /**\n   * Returns a read-only [Set] of all keys in this map.\n   * Accessing this property
first time creates a keys view from [entries].\n   * All subsequent accesses just return the created instance.\n   */\n  override val keys: Set<K>\n    get() {\n      if (_keys == null) {\n        _keys = object : AbstractSet<K>()\n      }\n\n      override operator fun contains(element: K): Boolean = containsKey(element)\n\n      override operator fun iterator(): Iterator<K> {\n        val entryIterator = entries.iterator()\n\n        return object : Iterator<K> {\n          override fun hasNext(): Boolean = entryIterator.hasNext()\n\n          override fun next(): K = entryIterator.next().key\n        }\n      }\n\n      override val size: Int get() = this@AbstractMap.size\n    }\n\n  @kotlin.jvm.Volatile\n  private var _keys: Set<K>? = null\n\n  override fun toString(): String =
entries.joinToString(", ", "{", "}") { toString(it) }\n\n  private fun toString(entry: Map.Entry<K, V>): String =
toString(entry.key) + "=" + toString(entry.value)\n\n  private fun toString(o: Any?): String = if (o === this) "\"(this
Map)\"" else o.toString()\n\n  /**\n   * Returns a read-only [Collection] of all values in this map.\n   * Accessing
this property first time creates a values view from [entries].\n   * All subsequent accesses just return the
created instance.\n   */\n  override val values: Collection<V>\n    get() {\n      if (_values == null) {\n        _values = object : AbstractCollection<V>()\n      }\n\n      override operator fun contains(element:
@UnsafeVariance
V): Boolean = containsValue(element)\n\n      override operator fun iterator(): Iterator<V> {\n        val entryIterator = entries.iterator()\n\n        return object : Iterator<V> {\n          override fun
hasNext(): Boolean = entryIterator.hasNext()\n\n          override fun next(): V = entryIterator.next().value\n        }\n      }\n\n      override val size: Int get() = this@AbstractMap.size\n    }\n\n  @kotlin.jvm.Volatile\n  private var _values: Collection<V>? = null\n\n  private fun implFindEntry(key: K): Map.Entry<K, V>? = entries.firstOrNull { it.key == key }\n\n  internal
companion object {\n    internal fun entryHashCode(e: Map.Entry<*, *>): Int = with(e) { (key?.hashCode() ?:
0) xor (value?.hashCode() ?: 0) }\n\n    internal fun entryToString(e: Map.Entry<*, *>): String
= with(e) { "$key=$value" }\n\n    internal fun entryEquals(e: Map.Entry<*, *>, other: Any?): Boolean {\n      if (other !is Map.Entry<*, *>) return false\n      return e.key == other.key && e.value == other.value\n    }\n  }\n\n  /**\n   * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n   * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n   */\n  @package kotlin.collections\n\n  /**\n   * Provides a skeletal implementation of the read-only [Set] interface.\n   * This class is intended to help implementing read-only sets so it doesn't support concurrent modification tracking.\n   * @param E the type of elements contained in the set. The set is covariant in its element type.\n   */\n  @SinceKotlin("1.1")\n  public abstract class AbstractSet<out E> protected constructor() :
AbstractCollection<E>(), Set<E> {\n\n    /**\n     * Compares this set with other set instance with the

```



```

[NoSuchElementException] if this deque is empty.\n    *^/\n    public fun last(): E = if (isEmpty()) throw
NoSuchElementException("ArrayDeque is empty.") else internalGet(internalIndex(lastIndex))\n\n    /**\n    * Returns the last element, or `null` if this deque is empty.\n    *^/\n    public fun lastOrNull(): E? = if (isEmpty()) null
else internalGet(internalIndex(lastIndex))\n\n    /**\n    * Prepends the specified [element] to this deque.\n    *^/\n    public fun addFirst(element: E) {\n        ensureCapacity(size + 1)\n        head = decremented(head)\n        elementData[head] = element\n        size += 1\n    }\n\n    /**\n    * Appends the specified [element] to this deque.\n    *^/\n    public fun addLast(element: E) {\n        ensureCapacity(size +
1)\n        elementData[internalIndex(size)] = element\n        size += 1\n    }\n\n    /**\n    * Removes the first
element from this deque and returns that removed element, or throws [NoSuchElementException] if this deque is
empty.\n    *^/\n    public fun removeFirst(): E {\n        if (isEmpty()) throw NoSuchElementException("ArrayDeque
is empty.")\n        val element = internalGet(head)\n        elementData[head] = null\n        head =
incremented(head)\n        size -= 1\n        return element\n    }\n\n    /**\n    * Removes the first element from this
deque and returns that removed element, or returns `null` if this deque is empty.\n    *^/\n    public fun
removeFirstOrNull(): E? = if (isEmpty()) null else removeFirst()\n\n    /**\n    * Removes the last element from this
deque and returns that removed element, or throws [NoSuchElementException] if this deque is empty.\n    *^/\n
public fun removeLast(): E {\n        if (isEmpty()) throw NoSuchElementException("ArrayDeque
is empty.")\n        val internalLastIndex = internalIndex(lastIndex)\n        val element =
internalGet(internalLastIndex)\n        elementData[internalLastIndex] = null\n        size -= 1\n        return element\n
}\n\n    /**\n    * Removes the last element from this deque and returns that removed element, or returns `null` if
this deque is empty.\n    *^/\n    public fun removeLastOrNull(): E? = if (isEmpty()) null else removeLast()\n\n    //
MutableList, MutableCollection\n    public override fun add(element: E): Boolean {\n        addLast(element)\n
return true\n    }\n\n    public override fun add(index: Int, element: E) {\n
AbstractList.checkPositionIndex(index, size)\n        if (index == size) {\n            addLast(element)\n
return\n        } else if (index == 0) {\n            addFirst(element)\n            return\n        }\n        ensureCapacity(size
+ 1)\n        // Elements in circular array lay in 2 ways:\n        //
1. `head` is less than `tail`: [#, #, e1, e2, e3, #]\n        // 2. `head` is greater than `tail`: [e3, #, #, #, e1, e2]\n
// where head is the index of the first element in the circular array,\n        // and tail is the index following the last
element.\n        //^/\n        // At this point the insertion index is not equal to head or tail.\n        // Also the circular array
can store at least one more element.\n        //^/\n        // Depending on where the given element must be inserted the
preceding or the succeeding\n        // elements will be shifted to make room for the element to be inserted.\n        //^/\n
        // In case the preceding elements are shifted:\n        // * if the insertion index is greater than the head (regardless
of circular array form)\n        // -> shift the preceding elements\n        // * otherwise, the circular array has (2)
form and the insertion index is less than tail\n        // -> shift all elements in the back of
the array\n        // -> shift preceding elements in the front of the array\n        // In case the succeeding elements
are shifted:\n        // * if the insertion index is less than the tail (regardless of circular array form)\n        // ->
shift the succeeding elements\n        // * otherwise, the circular array has (2) form and the insertion index is greater
than head\n        // -> shift all elements in the front of the array\n        // -> shift succeeding elements in the
back of the array\n        val internalIndex = internalIndex(index)\n        if (index < (size + 1) shr 1) {\n            //
closer to the first element -> shift preceding elements\n            val decrementedInternalIndex =
decremented(internalIndex)\n            val decrementedHead = decremented(head)\n            if
(decrementedInternalIndex >= head) {\n                elementData[decrementedHead] = elementData[head] // head can
be zero\n                elementData.copyInto(elementData,
head, head + 1, decrementedInternalIndex + 1)\n            } else { // head > tail\n
elementData.copyInto(elementData, head - 1, head, elementData.size) // head can't be zero\n
elementData[elementData.size - 1] = elementData[0]\n                elementData.copyInto(elementData, 0, 1,
decrementedInternalIndex + 1)\n            }\n            elementData[decrementedInternalIndex] = element\n
head = decrementedHead\n        } else {\n            // closer to the last element -> shift succeeding elements\n
val tail = internalIndex(size)\n            if (internalIndex < tail) {\n                elementData.copyInto(elementData,

```



```

internalIndex + 1, internalIndex, tail)\n        } else { // head > tail\n            elementData.copyInto(elementData,
1, 0, tail)\n            elementData[0] = elementData[elementData.size - 1]\n            elementData.copyInto(elementData, internalIndex + 1, internalIndex, elementData.size
- 1)\n        }\n        elementData[internalIndex] = element\n        size += 1\n    }\n    private fun
copyCollectionElements(internalIndex: Int, elements: Collection<E>) {\n        val iterator = elements.iterator()\n        for (index in internalIndex until elementData.size) {\n            if (!iterator.hasNext()) break\n            elementData[index] = iterator.next()\n        }\n        for (index in 0 until head) {\n            if (!iterator.hasNext())
break\n            elementData[index] = iterator.next()\n        }\n        size += elements.size\n    }\n    public override
fun addAll(elements: Collection<E>): Boolean {\n        if (elements.isEmpty()) return false\n        ensureCapacity(this.size + elements.size)\n        copyCollectionElements(internalIndex(size), elements)\n        return
true\n    }\n    public override fun addAll(index: Int, elements: Collection<E>): Boolean {\n
AbstractList.checkPositionIndex(index, size)\n        if (elements.isEmpty()) {\n            return false\n        } else if (index == size) {\n            return
addAll(elements)\n        }\n        ensureCapacity(this.size + elements.size)\n        val tail = internalIndex(size)\n        val internalIndex = internalIndex(index)\n        val elementsSize = elements.size\n        if (index < (size + 1) shr
1) {\n            // closer to the first element -> shift preceding elements\n            var shiftedHead = head -
elementsSize\n            if (internalIndex >= head) {\n                if (shiftedHead >= 0) {\n
                    elementData.copyInto(elementData, shiftedHead, head, internalIndex)\n                } else { // head < tail, insertion
leads to head >= tail\n                    shiftedHead += elementData.size\n                    val elementsToShift =
internalIndex - head\n                    val shiftToBack = elementData.size - shiftedHead\n                    if (shiftToBack
>= elementsToShift) {\n
                        elementData.copyInto(elementData, shiftedHead, head, internalIndex)\n                    } else {\n
                        elementData.copyInto(elementData, shiftedHead, head, head + shiftToBack)\n
                    }\n                }\n            }\n            elementData.copyInto(elementData, 0, head + shiftToBack, internalIndex)\n        }\n    }\n    }
else { // head > tail, internalIndex < tail\n        elementData.copyInto(elementData, shiftedHead, head,
elementData.size)\n        if (elementsSize >= internalIndex) {\n            elementData.copyInto(elementData,
elementData.size - elementsSize, 0, internalIndex)\n        } else {\n            elementData.copyInto(elementData, elementData.size - elementsSize, 0, elementsSize)\n
            elementData.copyInto(elementData, 0, elementsSize, internalIndex)\n        }\n        head =
shiftedHead\n        copyCollectionElements(negativeMod(internalIndex
- elementsSize), elements)\n    } else {\n        // closer to the last element -> shift succeeding elements\n        val shiftedInternalIndex = internalIndex + elementsSize\n        if (internalIndex < tail) {\n            if (tail +
elementsSize <= elementData.size) {\n                elementData.copyInto(elementData, shiftedInternalIndex,
internalIndex, tail)\n            } else { // head < tail, insertion leads to head >= tail\n                if
(shiftedInternalIndex >= elementData.size) {\n                    elementData.copyInto(elementData,
shiftedInternalIndex - elementData.size, internalIndex, tail)\n                } else {\n                    val shiftToFront =
tail + elementsSize - elementData.size\n                    elementData.copyInto(elementData, 0, tail - shiftToFront,
tail)\n                    elementData.copyInto(elementData, shiftedInternalIndex, internalIndex, tail - shiftToFront)\n
                }\n            }\n        }\n    } else { // head > tail, internalIndex > head\n        elementData.copyInto(elementData, elementsSize, 0, tail)\n        if (shiftedInternalIndex >= elementData.size)\n        {\n            elementData.copyInto(elementData, shiftedInternalIndex - elementData.size, internalIndex,
elementData.size)\n        } else {\n            elementData.copyInto(elementData, 0, elementData.size -
elementsSize, elementData.size)\n            elementData.copyInto(elementData, shiftedInternalIndex,
internalIndex, elementData.size - elementsSize)\n        }\n    }\n    }\n    }\n    copyCollectionElements(internalIndex, elements)\n    }\n    }\n    return true\n    }\n    }\n    public override fun
get(index: Int): E {\n        AbstractList.checkElementIndex(index, size)\n        return
internalGet(internalIndex(index))\n    }\n    }\n    public override fun set(index: Int, element: E): E {\n

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```

AbstractList.checkElementIndex(index,
size)\n\n    val internalIndex = internalIndex(index)\n    val oldElement = internalGet(internalIndex)\n    elementData[internalIndex] = element\n    return oldElement\n}\n\n    public override fun contains(element:
E): Boolean = indexOf(element) != -1\n\n    public override fun indexOf(element: E): Int {\n        val tail =
internalIndex(size)\n        if (head < tail) {\n            for (index in head until tail) {\n                if (element ==
elementData[index]) return index - head\n            }\n        } else if (head >= tail) {\n            for (index in head until
elementData.size) {\n                if (element == elementData[index]) return index - head\n            }\n            for
(index in 0 until tail) {\n                if (element == elementData[index]) return index + elementData.size - head\n
            }\n        }\n        return -1\n    }\n\n    public override fun lastIndexOf(element: E): Int {\n        val tail =
internalIndex(size)\n        if (head < tail) {\n            for (index in tail - 1 downTo head) {\n                if (element == elementData[index])
return index - head\n            }\n        } else if (head > tail) {\n            for (index in tail - 1 downTo 0) {\n                if
(element == elementData[index]) return index + elementData.size - head\n            }\n            for (index in
elementData.lastIndex downTo head) {\n                if (element == elementData[index]) return index - head\n
            }\n        }\n        return -1\n    }\n\n    public override fun remove(element: E): Boolean {\n        val index =
indexOf(element)\n        if (index == -1) return false\n        removeAt(index)\n        return true\n    }\n\n    public
override fun removeAt(index: Int): E {\n        AbstractList.checkElementIndex(index, size)\n        if (index ==
lastIndex) {\n            return removeLast()\n        } else if (index == 0) {\n            return removeFirst()\n
        }\n        val internalIndex = internalIndex(index)\n        val element = internalGet(internalIndex)\n        if
(index < size shr 1) {\n            // closer to the first element -> shift preceding elements\n            if (internalIndex >=
head) {\n                elementData.copyInto(elementData, head + 1, head, internalIndex)\n            } else { // head >
tail, internalIndex < head\n                elementData.copyInto(elementData, 1, 0, internalIndex)\n            }\n            elementData[0] = elementData[elementData.size - 1]\n            elementData.copyInto(elementData, head + 1,
head, elementData.size - 1)\n        }\n        elementData[head] = null\n        head = incremented(head)\n    } else {\n        // closer to the last element -> shift succeeding elements\n        val internalLastIndex =
internalIndex(lastIndex)\n        if (internalIndex <= internalLastIndex) {\n            elementData.copyInto(elementData, internalIndex, internalIndex
+ 1, internalLastIndex + 1)\n        } else { // head > tail, internalIndex > head\n            elementData.copyInto(elementData, internalIndex, internalIndex + 1, elementData.size)\n
            elementData[elementData.size - 1] = elementData[0]\n            elementData.copyInto(elementData, 0, 1,
internalLastIndex + 1)\n        }\n        elementData[internalLastIndex] = null\n    }\n    size -= 1\n    return element\n}\n\n    public override fun removeAll(elements: Collection<E>): Boolean = filterInPlace {
!elements.contains(it) }\n\n    public override fun retainAll(elements: Collection<E>): Boolean = filterInPlace {
elements.contains(it) }\n\n    private inline fun filterInPlace(predicate: (E) -> Boolean): Boolean {\n        if
(this.isEmpty() || elementData.isEmpty())\n            return false\n        val tail = internalIndex(size)\n        var
newTail = head\n        var modified = false\n        if (head < tail) {\n            for (index in head until tail) {\n                val element = elementData[index]\n                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E))\n                    elementData[newTail++] = element\n                else\n                    modified = true\n            }\n            elementData.fill(null, newTail, tail)\n        } else {\n            for (index in head until elementData.size) {\n                val element = elementData[index]\n                elementData[index] = null\n                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E))\n                    elementData[newTail++] = element\n                else\n                    modified = true\n            }\n            newTail =
positiveMod(newTail)\n            for (index in 0 until tail) {\n                val element = elementData[index]\n                elementData[index] = null\n                @Suppress("UNCHECKED_CAST")\n                if (predicate(element as E)) {\n                    elementData[newTail] = element\n                    newTail =
incremented(newTail)\n                } else {\n                    modified = true\n                }\n            }\n        }\n        if
(modified)\n            size = negativeMod(newTail - head)\n        return modified\n    }\n\n    public override fun

```



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        return false\n    }\n\n    when {\n        v1 is Array<*> && v2 is Array<*> -> if
(!v1.contentDeepEquals(v2)) return false\n        v1 is ByteArray && v2 is ByteArray -> if
(!v1.contentEquals(v2)) return false\n        v1 is ShortArray && v2 is ShortArray -> if (!v1.contentEquals(v2))
return false\n        v1 is IntArray && v2 is IntArray -> if (!v1.contentEquals(v2)) return false\n        v1 is
LongArray && v2 is LongArray -> if (!v1.contentEquals(v2)) return false\n        v1 is FloatArray && v2 is
FloatArray -> if (!v1.contentEquals(v2)) return false\n        v1 is DoubleArray && v2 is DoubleArray -> if
(!v1.contentEquals(v2)) return false\n        v1 is CharArray && v2 is CharArray -> if (!v1.contentEquals(v2))
return false\n        v1 is BooleanArray && v2 is BooleanArray -> if (!v1.contentEquals(v2)) return false\n\n
v1 is UByteArray && v2 is UByteArray -> if (!v1.contentEquals(v2)) return false\n        v1 is UShortArray
&& v2 is UShortArray -> if (!v1.contentEquals(v2)) return false\n        v1 is UIntArray && v2 is UIntArray -
> if (!v1.contentEquals(v2)) return false\n        v1 is ULongArray && v2 is ULongArray -> if
(!v1.contentEquals(v2)) return false\n    } else -> if (v1 != v2) return false\n    }\n\n    }\n    return
true\n}\n\n@SinceKotlin("1.3")\n@PublishedApi\n@kotlin.jvm.JvmName("contentDeepToString")\n@kotlin.js.
JsName("contentDeepToStringImpl")\ninternal fun <T> Array<out T>?.contentDeepToStringImpl():
String {\n    if (this == null) return "null"\n    val length = size.coerceAtMost((Int.MAX_VALUE - 2) / 5) * 5 + 2
// in order not to overflow Int.MAX_VALUE\n    return buildString(length) {\n
contentDeepToStringInternal(this, mutableListOf())\n
}\n}\n\n@OptIn(ExperimentalUnsignedTypes::class)\nprivate fun <T> Array<out
T>.contentDeepToStringInternal(result: StringBuilder, processed: MutableList<Array<*>>) {\n    if (this in
processed) {\n        result.append("[...]")\n        return\n    }\n    processed.add(this)\n    result.append('[')\n\n    for (i
in indices) {\n        if (i != 0) {\n            result.append(", ")\n        }\n        val element = this[i]\n        when
(element) {\n            null -> result.append("null")\n            is Array<*> ->
element.contentDeepToStringInternal(result, processed)\n            is ByteArray ->
result.append(element.contentToString())\n            is ShortArray -> result.append(element.contentToString())\n
            is IntArray -> result.append(element.contentToString())\n            is LongArray ->
result.append(element.contentToString())\n            is FloatArray -> result.append(element.contentToString())\n
            is DoubleArray -> result.append(element.contentToString())\n            is CharArray ->
result.append(element.contentToString())\n            is BooleanArray -> result.append(element.contentToString())\n
            is UByteArray -> result.append(element.contentToString())\n            is UShortArray ->
result.append(element.contentToString())\n            is UIntArray -> result.append(element.contentToString())\n
            is ULongArray -> result.append(element.contentToString())\n            else ->
result.append(element.toString())\n        }\n    }\n\n    result.append(',')\n    processed.removeAt(processed.lastIndex)\n}"/>\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.collections\n\n/**\n * Data class representing a value from a collection or sequence, along with
its index in that collection or sequence.\n * @property value the underlying value.\n * @property index the
index of the value in the collection or sequence.\n */\n\npublic data class IndexedValue<out T>(public val index: Int,
public val value: T)\n"/>\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmName("MapAccessorsKt")\n\npackage
kotlin.collections\n\nimport kotlin.reflect.KProperty\nimport kotlin.internal.Exact\n\n/**\n * Returns the value of
the property for the given object from this read-only map.\n * @param thisRef the object for which the value is
requested
(not used).\n * @param property the metadata for the property, used to get the name of property and lookup the
value corresponding to this name in the map.\n * @return the property value.\n * @throws
NoSuchElementException when the map doesn't contain value for the property name and doesn't provide an implicit
default (see [withDefault]).\n */\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <V, V1 : V> Map<in

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```

String, @Exact V>.getValue(thisRef: Any?, property: KProperty<*>): V1 =\n
@Suppress(\\"UNCHECKED_CAST\\") (getOrImplicitDefault(property.name) as V1)\n\n/**\n * Returns the value
of the property for the given object from this mutable map.\n * @param thisRef the object for which the value is
requested (not used).\n * @param property the metadata for the property, used to get the name of property and
lookup the value corresponding to this name in the map.\n * @return the property value.\n * \n * @throws
NoSuchElementException when the map doesn't contain value
for the property name and doesn't provide an implicit default (see [withDefault]).\n
*\n@kotlin.jvm.JvmName(\\"getVar\\")\n@kotlin.internal.InlineOnly\npublic inline operator fun <V, V1 : V>
MutableMap<in String, out @Exact V>.getValue(thisRef: Any?, property: KProperty<*>): V1 =\n
@Suppress(\\"UNCHECKED_CAST\\") (getOrImplicitDefault(property.name) as V1)\n\n/**\n * Stores the value of
the property for the given object in this mutable map.\n * @param thisRef the object for which the value is
requested (not used).\n * @param property the metadata for the property, used to get the name of property and store
the value associated with that name in the map.\n * @param value the value to set.\n
*\n@kotlin.internal.InlineOnly\npublic inline operator fun <V> MutableMap<in String, in V>.setValue(thisRef:
Any?, property: KProperty<*>, value: V) {\n    this.put(property.name, value)\n}\n\n"/\n * Copyright 2010-2018
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source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName(\\"MapsKt\\")\n\npackage
kotlin.collections\n\n/**\n * Returns the value for the given key, or the implicit default value for this map.\n * By
default no implicit value is provided for maps and a [NoSuchElementException] is thrown.\n * To create a map with
implicit default value use [withDefault] method.\n * \n * @throws NoSuchElementException when the map doesn't
contain a value for the specified key and no implicit default was provided for that map.\n
*\n@kotlin.jvm.JvmName(\\"getOrImplicitDefaultNullable\\")\n@PublishedApi\ninternal fun <K, V> Map<K,
V>.getOrImplicitDefault(key: K): V {\n    if (this is MapWithDefault)\n        return
this.getOrImplicitDefault(key)\n    return getOrElseNullable(key, { throw NoSuchElementException(\\"Key $key
is missing in the map.\") })\n}\n\n/**\n * Returns a wrapper of this read-only
map, having the implicit default value provided with the specified function [defaultValue].\n * \n * This implicit
default value is used when the original map doesn't contain a value for the key specified\n * and a value is obtained
with [Map.getValue] function, for example when properties are delegated to the map.\n * \n * When this map already
has an implicit default value provided with a former call to [withDefault], it is being replaced by this call.\n
*\npublic fun <K, V> Map<K, V>.withDefault(defaultValue: (key: K) -> V): Map<K, V> =\n    when (this) {\n
is MapWithDefault -> this.map.withDefault(defaultValue)\n    else -> MapWithDefaultImpl(this, defaultValue)\n
}\n\n/**\n * Returns a wrapper of this mutable map, having the implicit default value provided with the specified
function [defaultValue].\n * \n * This implicit default value is used when the original map doesn't contain a value for
the key specified\n * and a value is obtained with [Map.getValue] function,
for example when properties are delegated to the map.\n * \n * When this map already has an implicit default value
provided with a former call to [withDefault], it is being replaced by this call.\n
*\n@kotlin.jvm.JvmName(\\"withDefaultMutable\\")\npublic fun <K, V> MutableMap<K,
V>.withDefault(defaultValue: (key: K) -> V): MutableMap<K, V> =\n    when (this) {\n
is
MutableMapWithDefault -> this.map.withDefault(defaultValue)\n    else -> MutableMapWithDefaultImpl(this,
defaultValue)\n    }\n\nprivate interface MapWithDefault<K, out V> : Map<K, V> {\n    public val map: Map<K,
V>\n    public fun getOrImplicitDefault(key: K): V\n}\n\nprivate interface MutableMapWithDefault<K, V> :
MutableMap<K, V>, MapWithDefault<K, V> {\n    public override val map: MutableMap<K, V>\n}\n\nprivate
class MapWithDefaultImpl<K, out V>(public override val map: Map<K, V>, private val default: (key: K) -> V) :
MapWithDefault<K, V> {\n    override fun equals(other: Any?): Boolean = map.equals(other)\n
    override fun hashCode(): Int = map.hashCode()\n    override fun toString(): String = map.toString()\n    override
val size: Int get() = map.size\n    override fun isEmpty(): Boolean = map.isEmpty()\n    override fun
containsKey(key: K): Boolean = map.containsKey(key)\n    override fun containsValue(value: @UnsafeVariance

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V): Boolean = map.containsValue(value)\n  override fun get(key: K): V? = map.get(key)\n  override val keys:
Set<K> get() = map.keys\n  override val values: Collection<V> get() = map.values\n  override val entries:
Set<Map.Entry<K, V>> get() = map.entries\n\n  override fun getOrDefault(key: K): V =
map.getOrNull(key, { default(key) })\n}\n\nprivate class MutableMapWithDefaultImpl<K, V>(public
override val map: MutableMap<K, V>, private val default: (key: K) -> V) : MutableMapWithDefault<K, V> {\n
override fun equals(other: Any?): Boolean = map.equals(other)\n  override fun hashCode(): Int =
map.hashCode()\n  override fun toString():
String = map.toString()\n  override val size: Int get() = map.size\n  override fun isEmpty(): Boolean =
map.isEmpty()\n  override fun containsKey(key: K): Boolean = map.containsKey(key)\n  override fun
containsValue(value: @UnsafeVariance V): Boolean = map.containsValue(value)\n  override fun get(key: K): V?
= map.get(key)\n  override val keys: MutableSet<K> get() = map.keys\n  override val values:
MutableCollection<V> get() = map.values\n  override val entries: MutableSet<MutableMap.MutableEntry<K,
V>> get() = map.entries\n\n  override fun put(key: K, value: V): V? = map.put(key, value)\n  override fun
remove(key: K): V? = map.remove(key)\n  override fun putAll(from: Map<out K, V>) = map.putAll(from)\n
override fun clear() = map.clear()\n\n  override fun getOrDefault(key: K): V = map.getOrNull(key,
{ default(key) })\n}\n\n"/>\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code
is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("CollectionsKt")\n\npackage
kotlin.collections\n\n/**\n * Removes a single instance of the specified element from this\n * collection, if it is
present.\n * \n * Allows to overcome type-safety restriction of `remove` that requires to pass an element of type
`E`.\n * \n * @return `true` if the element has been successfully removed; `false` if it was not present in the
collection.\n * \n *@kotlin.internal.InlineOnly\npublic inline fun <@kotlin.internal.OnlyInputTypes T>
MutableCollection<out T>.remove(element: T): Boolean =\n  @Suppress("UNCHECKED_CAST") (this as
MutableCollection<T>).remove(element)\n\n/**\n * Removes all of this collection's elements that are also
contained in the specified collection.\n * \n * Allows to overcome type-safety restriction of `removeAll` that requires
to pass a collection of type `Collection<E>`.\n * \n * @return `true` if any of the specified elements was removed from the collection, `false` if the collection was not
modified.\n * \n *@kotlin.internal.InlineOnly\npublic inline fun <@kotlin.internal.OnlyInputTypes T>
MutableCollection<out T>.removeAll(elements: Collection<T>): Boolean =\n  @Suppress("UNCHECKED_CAST") (this as
MutableCollection<T>).removeAll(elements)\n\n/**\n * Retains
only the elements in this collection that are contained in the specified collection.\n * \n * Allows to overcome type-
safety restriction of `retainAll` that requires to pass a collection of type `Collection<E>`.\n * \n * @return `true` if
any element was removed from the collection, `false` if the collection was not modified.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline fun <@kotlin.internal.OnlyInputTypes T> MutableCollection<out
T>.retainAll(elements: Collection<T>): Boolean =\n  @Suppress("UNCHECKED_CAST") (this as
MutableCollection<T>).retainAll(elements)\n\n/**\n * Adds the specified [element]
to this mutable collection.\n * \n *@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in
T>.plusAssign(element: T) {\n  this.add(element)\n}\n\n/**\n * Adds all elements of the given [elements]
collection to this mutable collection.\n * \n *@kotlin.internal.InlineOnly\npublic inline operator fun <T>
MutableCollection<in T>.plusAssign(elements: Iterable<T>) {\n  this.addAll(elements)\n}\n\n/**\n * Adds all
elements of the given [elements] array to this mutable collection.\n * \n *@kotlin.internal.InlineOnly\npublic inline
operator fun <T> MutableCollection<in T>.plusAssign(elements: Array<T>) {\n
this.addAll(elements)\n}\n\n/**\n * Adds all elements of the given [elements] sequence to this mutable collection.\n
*/\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in T>.plusAssign(elements:
Sequence<T>) {\n  this.addAll(elements)\n}\n\n/**\n * Removes a single instance of the specified [element] from
this mutable collection.\n

```

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*^@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in T>.minusAssign(element:
T) {\n  this.remove(element)\n}\n\n/**\n * Removes all elements contained in the given [elements] collection from
this mutable collection.\n *^@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in
T>.minusAssign(elements: Iterable<T>) {\n  this.removeAll(elements)\n}\n\n/**\n * Removes all elements
contained in the given [elements] array from this mutable collection.\n *^@kotlin.internal.InlineOnly\npublic
inline operator fun <T> MutableCollection<in T>.minusAssign(elements: Array<T>) {\n
this.removeAll(elements)\n}\n\n/**\n * Removes all elements contained in the given [elements] sequence from this
mutable collection.\n *^@kotlin.internal.InlineOnly\npublic inline operator fun <T> MutableCollection<in
T>.minusAssign(elements: Sequence<T>) {\n  this.removeAll(elements)\n}\n\n/**\n * Adds all elements of the
given [elements] collection
to this [MutableCollection].\n *^public fun <T> MutableCollection<in T>.addAll(elements: Iterable<T>):
Boolean {\n  when (elements) {\n    is Collection -> return addAll(elements)\n    else -> {\n      var result:
Boolean = false\n      for (item in elements)\n        if (add(item)) result = true\n      return result\n    }\n  }\n}\n\n/**\n * Adds all elements of the given [elements] sequence to this [MutableCollection].\n *^public fun
<T> MutableCollection<in T>.addAll(elements: Sequence<T>): Boolean {\n  var result: Boolean = false\n  for
(item in elements) {\n    if (add(item)) result = true\n  }\n  return result\n}\n\n/**\n * Adds all elements of the
given [elements] array to this [MutableCollection].\n *^public fun <T> MutableCollection<in T>.addAll(elements:
Array<out T>): Boolean {\n  return addAll(elements.asList())\n}\n\n/**\n * Converts this [Iterable] to a list if it is
not a [Collection].\n * Otherwise, returns
this.\n *^internal fun <T> Iterable<T>.convertToListIfNotCollection(): Collection<T> =\n  if (this is Collection)
this else toList()\n\n/**\n * Removes all elements from this [MutableCollection] that are also contained in the given
[elements] collection.\n *^public fun <T> MutableCollection<in T>.removeAll(elements: Iterable<T>): Boolean
{\n  return removeAll(elements.convertToListIfNotCollection())\n}\n\n/**\n * Removes all elements from this
[MutableCollection] that are also contained in the given [elements] sequence.\n *^public fun <T>
MutableCollection<in T>.removeAll(elements: Sequence<T>): Boolean {\n  val list = elements.toList()\n  return
list.isNotEmpty() && removeAll(list)\n}\n\n/**\n * Removes all elements from this [MutableCollection] that are
also contained in the given [elements] array.\n *^public fun <T> MutableCollection<in T>.removeAll(elements:
Array<out T>): Boolean {\n  return elements.isNotEmpty() && removeAll(elements.asList())\n}\n\n/**\n *
Retains
only elements of this [MutableCollection] that are contained in the given [elements] collection.\n *^public fun
<T> MutableCollection<in T>.retainAll(elements: Iterable<T>): Boolean {\n  return
retainAll(elements.convertToListIfNotCollection())\n}\n\n/**\n * Retains only elements of this [MutableCollection]
that are contained in the given [elements] array.\n *^public fun <T> MutableCollection<in T>.retainAll(elements:
Array<out T>): Boolean {\n  if (elements.isNotEmpty())\n    return retainAll(elements.asList())\n  else\n
return retainNothing()\n}\n\n/**\n * Retains only elements of this [MutableCollection] that are contained in the
given [elements] sequence.\n *^public fun <T> MutableCollection<in T>.retainAll(elements: Sequence<T>):
Boolean {\n  val list = elements.toList()\n  if (list.isNotEmpty())\n    return retainAll(list)\n  else\n
return retainNothing()\n}\n\nprivate fun MutableCollection<*>.retainNothing(): Boolean {\n  val result
= isEmpty()\n  clear()\n  return result\n}\n\n/**\n * Removes all elements from this [MutableIterable] that
match the given [predicate].\n * @return `true` if any element was removed from this collection, or `false` when
no elements were removed and collection was not modified.\n *^public fun <T>
MutableIterable<T>.removeAll(predicate: (T) -> Boolean): Boolean = filterInPlace(predicate, true)\n\n/**\n *
Retains only elements of this [MutableIterable] that match the given [predicate].\n * @return `true` if any
element was removed from this collection, or `false` when all elements were retained and collection was not
modified.\n *^public fun <T> MutableIterable<T>.retainAll(predicate: (T) -> Boolean): Boolean =
filterInPlace(predicate, false)\n\nprivate fun <T> MutableIterable<T>.filterInPlace(predicate: (T) -> Boolean,
predicateResultToRemove: Boolean): Boolean {\n  var result = false\n  with(iterator()) {\n    while
(hasNext())\n      if (predicate(next()))

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samples.collections.Sequences.Building.buildFibonacciSequence\n
*\n@RestrictsSuspension\n@SinceKotlin(1.3)\npublic abstract class SequenceScope<in T> internal
constructor() {\n /**\n * Yields a value to the [Iterator]
being built and suspends\n * until the next value is requested.\n *\n * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n * @sample
samples.collections.Sequences.Building.buildFibonacciSequence\n */\n public abstract suspend fun yield(value:
T)\n\n /**\n * Yields all values from the `iterator` to the [Iterator] being built\n * and suspends until all these
values are iterated and the next one is requested.\n *\n * The sequence of values returned by the given iterator
can be potentially infinite.\n *\n * @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n
*/\n public abstract suspend fun yieldAll(iterator: Iterator<T>)\n\n /**\n * Yields a collections of values to
the [Iterator] being built\n * and suspends until all these values are iterated and the next one is requested.\n
*\n * @sample samples.collections.Sequences.Building.buildSequenceYieldAll\n */\n public
suspend fun yieldAll(elements: Iterable<T>) {\n if (elements is Collection && elements.isEmpty()) return\n
return yieldAll(elements.iterator())\n }\n\n /**\n * Yields potentially infinite sequence of values to the
[Iterator] being built\n * and suspends until all these values are iterated and the next one is requested.\n
*\n * The sequence can be potentially infinite.\n *\n * @sample
samples.collections.Sequences.Building.buildSequenceYieldAll\n */\n public suspend fun yieldAll(sequence:
Sequence<T>) = yieldAll(sequence.iterator())\n}\n\nprivate typealias State = Int\nprivate const val
State_NotReady: State = 0\nprivate const val State_ManyNotReady: State = 1\nprivate const val State_ManyReady:
State = 2\nprivate const val State_Ready: State = 3\nprivate const val State_Done: State = 4\nprivate const val
State_Failed: State = 5\nprivate class SequenceBuilderIterator<T> : SequenceScope<T>(), Iterator<T>,
Continuation<Unit> {\n
private var state = State_NotReady\n private var nextValue: T? = null\n private var nextIterator: Iterator<T>?
= null\n var nextStep: Continuation<Unit>? = null\n\n override fun hasNext(): Boolean {\n while (true) {\n
when (state) {\n State_NotReady -> {}\n State_ManyNotReady ->\n if
(nextIterator!!.hasNext()) {\n state = State_ManyReady\n return true\n }
else {\n nextIterator = null\n }\n State_Done -> return false\n
State_Ready, State_ManyReady -> return true\n else -> throw exceptionalState()\n }\n\n state
= State_Failed\n val step = nextStep!!\n nextStep = null\n step.resume(Unit)\n }\n }\n\n
override fun next(): T {\n when (state) {\n State_NotReady, State_ManyNotReady
-> return nextNotReady()\n State_ManyReady -> {\n state = State_ManyNotReady\n
return nextIterator!!.next()\n }\n State_Ready -> {\n state = State_NotReady\n
@Suppress("UNCHECKED_CAST")\n val result = nextValue as T\n nextValue = null\n
return result\n }\n else -> throw exceptionalState()\n }\n }\n\n private fun nextNotReady(): T
{\n if (!hasNext()) throw NoSuchElementException() else return next()\n }\n\n private fun
exceptionalState(): Throwable = when (state) {\n State_Done -> NoSuchElementException()\n State_Failed
-> IllegalStateException("Iterator has failed.")\n else -> IllegalStateException("Unexpected state of the
iterator: $state")\n }\n\n\n override suspend fun yield(value: T) {\n nextValue = value\n state =
State_Ready\n return suspendCoroutineUninterceptedOrReturn
{ c ->\n nextStep = c\n COROUTINE_SUSPENDED\n }\n }\n\n override suspend fun
yieldAll(iterator: Iterator<T>) {\n if (!iterator.hasNext()) return\n nextIterator = iterator\n state =
State_ManyReady\n return suspendCoroutineUninterceptedOrReturn { c ->\n nextStep = c\n
COROUTINE_SUSPENDED\n }\n }\n\n // Completion continuation implementation\n override fun
resumeWith(result: Result<Unit>) {\n result.getOrNull() // just rethrow exception if it is there\n state =
State_Done\n }\n\n override val context: CoroutineContext\n get() = EmptyCoroutineContext\n}\n\n/*
Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.collections\n\ninternal fun checkWindowSizeStep(size:

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Int, step: Int) {\n  require(size > 0 && step > 0) {\n    if (size != step)\n      \"Both size $size and step $step\n      must be greater than zero.\"\n    else\n      \"size $size must be greater than zero.\"\n  }\n}\n\ninternal fun <T>\nSequence<T>.windowedSequence(size: Int, step: Int, partialWindows: Boolean, reuseBuffer: Boolean):\nSequence<List<T>> {\n  checkWindowSizeStep(size, step)\n  return Sequence { windowedIterator(iterator(),\nsize, step, partialWindows, reuseBuffer) }\n}\n\ninternal fun <T> windowedIterator(iterator: Iterator<T>, size: Int,\nstep: Int, partialWindows: Boolean, reuseBuffer: Boolean): Iterator<List<T>> {\n  if (!iterator.hasNext()) return\nEmptyIterator\n  return iterator<List<T>> {\n    val bufferInitialCapacity = size.coerceAtMost(1024)\n    val\n    gap = step - size\n    if (gap >= 0) {\n      var buffer = ArrayList<T>(bufferInitialCapacity)\n      var skip =\n      0\n      for (e in iterator) {\n        if (skip > 0) { skip -= 1; continue }\n        buffer.add(e)\n        if (buffer.size == size) {\n          yield(buffer)\n          if (reuseBuffer) buffer.clear() else buffer = ArrayList(size)\n          skip = gap\n        }\n      }\n      if (buffer.isNotEmpty()) {\n        if (partialWindows || buffer.size == size)\n          yield(buffer)\n      }\n    } else {\n      var buffer = RingBuffer<T>(bufferInitialCapacity)\n      for (e in\n      iterator) {\n        buffer.add(e)\n        if (buffer.isFull()) {\n          if (buffer.size < size) { buffer =\n          buffer.expanded(maxCapacity = size); continue }\n          yield(if (reuseBuffer) buffer else\n          ArrayList(buffer))\n          buffer.removeFirst(step)\n        }\n      }\n      if (partialWindows) {\n        while (buffer.size > step) {\n          yield(if (reuseBuffer)\n          buffer else ArrayList(buffer))\n          buffer.removeFirst(step)\n        }\n      }\n      if\n      (buffer.isNotEmpty()) yield(buffer)\n    }\n  }\n}\n\ninternal class MovingSubList<out E>(private val\nlist: List<E>) : AbstractList<E>(), RandomAccess {\n  private var fromIndex: Int = 0\n  private var _size: Int =\n  0\n  fun move(fromIndex: Int, toIndex: Int) {\n    checkRangeIndexes(fromIndex, toIndex, list.size)\n    this.fromIndex = fromIndex\n    this._size = toIndex - fromIndex\n  }\n  override fun get(index: Int): E {\n    checkElementIndex(index, _size)\n    return list[fromIndex + index]\n  }\n  override val size: Int get() =\n  _size\n}\n\n/**\n * Provides ring buffer implementation.\n */\n * Buffer overflow is not allowed so [add] doesn't\n * overwrite tail but raises an exception.\n */\nprivate class RingBuffer<T>(private val buffer: Array<Any?>,\nfilledSize: Int) : AbstractList<T>(), RandomAccess {\n  init {\n    require(filledSize >= 0) { \"ring buffer filled size should not be negative but it is $filledSize\" }\n    require(filledSize <= buffer.size) { \"ring buffer filled size: $filledSize cannot be larger than the buffer size:\n    ${buffer.size}\" }\n  }\n  constructor(capacity: Int) : this(arrayOfNulls<Any?>(capacity), 0)\n  private val\n  capacity = buffer.size\n  private var startIndex: Int = 0\n  override var size: Int = filledSize\n  private set\n  override fun get(index: Int): T {\n    checkElementIndex(index, size)\n    @Suppress(\"UNCHECKED_CAST\")\n    return buffer[startIndex.forward(index)] as T\n  }\n  fun isFull() =\n  size == capacity\n  override fun iterator(): Iterator<T> = object : AbstractIterator<T>() {\n    private var count\n    = size\n    private var index = startIndex\n    override fun computeNext() {\n      if (count == 0) {\n        done()\n      } else {\n        @Suppress(\"UNCHECKED_CAST\")\n        setNext(buffer[index] as T)\n        index = index.forward(1)\n        count--\n      }\n    }\n  }\n  }\n  @Suppress(\"UNCHECKED_CAST\")\n  override fun <T> toArray(array: Array<T>): Array<T> {\n    val result: Array<T?> =\n    if (array.size < this.size) array.copyOf(this.size) else array as Array<T?>\n    val size = this.size\n    var widx = 0\n    var idx = startIndex\n    while (widx < size && idx < capacity)\n    {\n      result[widx] = buffer[idx] as T\n      widx++\n      idx++\n    }\n    idx = 0\n    while\n    (widx < size) {\n      result[widx] = buffer[idx] as T\n      widx++\n      idx++\n    }\n    if (result.size\n    > this.size) result[this.size] = null\n    return result as Array<T>\n  }\n  override fun toArray():\n  Array<Any?> {\n    return toArray(arrayOfNulls(size))\n  }\n  /**\n   * Creates a new\n   * ring buffer with the capacity equal to the minimum of [maxCapacity] and 1.5 * [capacity].\n   * The returned ring\n   * buffer contains the same elements as this ring buffer.\n   */\n  fun expanded(maxCapacity: Int): RingBuffer<T>\n  {\n    val newCapacity = (capacity + (capacity shr 1) + 1).coerceAtMost(maxCapacity)\n    val newBuffer = if\n    (startIndex == 0) buffer.copyOf(newCapacity) else toArray(arrayOfNulls(newCapacity))\n    return\n    RingBuffer(newBuffer, size)\n  }\n  /**\n   * Add [element] to the buffer or fail with [IllegalStateException] if

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no free space available in the buffer\n    */\n    fun add(element: T) {\n        if (isFull()) {\n            throw
IllegalStateException("\ring buffer is full")\n        }\n        buffer[startIndex.forward(size)] = element\n        size++\n    }\n\n    /**\n     * Removes [n] first elements from the buffer or fails with [IllegalArgumentException] if
not enough elements in the buffer to remove\n     */\n    fun removeFirst(n:
Int) {\n        require(n >= 0) { "\n shouldn't be negative but it is $n" }\n        require(n <= size) { "\n shouldn't be
greater than the buffer size: n = $n, size = $size" }\n        if (n > 0) {\n            val start = startIndex\n            val
end = start.forward(n)\n            if (start > end) {\n                buffer.fill(null, start, capacity)\n
buffer.fill(null, 0, end)\n            } else {\n                buffer.fill(null, start, end)\n            }\n            startIndex =
end\n            size -= n\n        }\n    }\n\n    @Suppress("\NOTHING_TO_INLINE")\n    private inline fun
Int.forward(n: Int): Int = (this + n) % capacity\n}\n\n"/**\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.collections\n\n// UByteArray
=====\n\n@Exp
erimentalUnsignedTypes\nprivate
fun partition(\n    array: UByteArray, left: Int, right: Int): Int {\n    var i = left\n    var j = right\n    val pivot =
array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n            i++\n        while (array[j] >
pivot)\n            j--\n        if (i <= j) {\n            val tmp = array[i]\n            array[i] = array[j]\n            array[j] = tmp\n
            i++\n            j--\n        }\n    }\n    return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n
array: UByteArray, left: Int, right: Int) {\n    val index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index < right)\n        quickSort(array, index, right)\n}\n\n// UShortArray
=====\n\n@Exp
erimentalUnsignedTypes\nprivate fun partition(\n    array: UShortArray, left: Int,
right: Int): Int {\n    var i = left\n    var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n
while (array[i] < pivot)\n        i++\n        while (array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp =
array[i]\n            array[i] = array[j]\n            array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return
i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: UShortArray, left: Int, right: Int) {\n    val
index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index <
right)\n        quickSort(array, index, right)\n}\n\n// UIntArray
=====\n\n@Exp
erimentalUnsignedTypes\nprivate fun partition(\n    array: UIntArray, left: Int, right: Int): Int {\n    var i = left\n
var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j)\n    {\n        while (array[i] < pivot)\n            i++\n
        while (array[j] > pivot)\n            j--\n        if (i <= j) {\n            val tmp = array[i]\n            array[i] =
array[j]\n            array[j] = tmp\n            i++\n            j--\n        }\n    }\n    return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: UIntArray, left: Int, right: Int) {\n    val
index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if (index <
right)\n        quickSort(array, index, right)\n}\n\n// ULongArray
=====\n\n@Exp
erimentalUnsignedTypes\nprivate fun partition(\n    array: ULongArray, left: Int, right: Int): Int {\n    var i = left\n
var j = right\n    val pivot = array[(left + right) / 2]\n    while (i <= j) {\n        while (array[i] < pivot)\n            i++\n
        while (array[j] > pivot)\n            j--\n        if (i <=
j) {\n            val tmp = array[i]\n            array[i] = array[j]\n            array[j] = tmp\n            i++\n            j--\n
        }\n    }\n    return i\n}\n\n@ExperimentalUnsignedTypes\nprivate fun quickSort(\n    array: ULongArray, left: Int, right:
Int) {\n    val index = partition(array, left, right)\n    if (left < index - 1)\n        quickSort(array, left, index - 1)\n    if
(index < right)\n        quickSort(array, index, right)\n}\n\n\n// Interfaces
=====\n\n/**\n * Sorts the given array using qsort algorithm.\n */\n\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array:
UByteArray, fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex -
1)\n\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UShortArray, fromIndex: Int, toIndex: Int) =

```

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quickSort(array, fromIndex, toIndex - 1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array: UIntArray,
fromIndex: Int, toIndex:
Int) = quickSort(array, fromIndex, toIndex - 1)\n@ExperimentalUnsignedTypes\ninternal fun sortArray(array:
ULongArray, fromIndex: Int, toIndex: Int) = quickSort(array, fromIndex, toIndex - 1)", /*\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin\n\nimport
kotlin.internal.InlineOnly\n\n/**\n * Compares this object with the specified object for order. Returns zero if this
object is equal\n * to the specified [other] object, a negative number if it's less than [other], or a positive number\n *
if it's greater than [other].\n * This function delegates to [Comparable.compareTo] and allows to call it in infix
form.\n */\n@InlineOnly\n@SinceKotlin("1.6")\npublic inline infix fun <T> Comparable<T>.compareTo(other:
T): Int =\n    this.compareTo(other)\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n\npackage kotlin.contracts\n\nimport
kotlin.internal.ContractsDsl\nimport kotlin.internal.InlineOnly\n\n/**\n * This marker distinguishes the
experimental contract declaration API and is used to opt-in for that feature\n * when declaring contracts of user
functions.\n * Any usage of a declaration annotated with `@ExperimentalContracts` must be accepted either
by\n * annotating that usage with the [OptIn] annotation, e.g. `@OptIn(ExperimentalContracts::class)`,\n * or by
using the compiler argument `-opt-in=kotlin.contracts.ExperimentalContracts`.\n
*/\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.3")\n@RequiresOptIn\n@MustBeDocumente
d\npublic annotation class ExperimentalContracts\n\n/**\n * Provides a scope, where the functions of the contract
DSL, such as [returns], [callsInPlace], etc.,\n * can be used to
describe the contract of a function.\n * This type is used as a receiver type of the lambda function passed to the
[contract] function.\n * @see contract\n
*/\n@ContractsDsl\n@ExperimentalContracts\n@SinceKotlin("1.3")\npublic interface ContractBuilder {\n    /**\n
 * Describes a situation when a function returns normally, without any exceptions thrown.\n    * Use
[SimpleEffect.implies] function to describe a conditional effect that happens in such case.\n    * //
@sample samples.contracts.returnsContract\n    @ContractsDsl public fun returns(): Returns\n    /**\n
 * Describes a situation when a function returns normally with the specified return [value].\n    * The possible
values of [value] are limited to `true`, `false` or `null`.\n    * Use [SimpleEffect.implies] function to describe a
conditional effect that happens in such case.\n    * // @sample samples.contracts.returnsTrueContract\n
// @sample samples.contracts.returnsFalseContract\n
// @sample samples.contracts.returnsNullContract\n    @ContractsDsl public fun returns(value: Any?):
Returns\n    /**\n
 * Describes a situation when a function returns normally with any value that is not `null`.\n
 * Use [SimpleEffect.implies] function to describe a conditional effect that happens in such case.\n
 * // @sample samples.contracts.returnsNotNullContract\n    @ContractsDsl public fun returnsNotNull():
ReturnsNotNull\n    /**\n
 * Specifies that the function parameter [lambda] is invoked in place.\n    * This
contract specifies that:\n    * 1. the function [lambda] can only be invoked during the call of the owner function,\n
 * and it won't be invoked after that owner function call is completed;\n    * 2. _(optionally)_ the function [lambda]
is invoked the amount of times specified by the [kind] parameter,\n    * see the [InvocationKind] enum for possible
values.\n    * A
function declaring the `callsInPlace` effect must be _inline_.\n    * // @sample
samples.contracts.callsInPlaceAtMostOnceContract\n    * @sample
samples.contracts.callsInPlaceAtLeastOnceContract\n    * @sample
samples.contracts.callsInPlaceExactlyOnceContract\n    * @sample
samples.contracts.callsInPlaceUnknownContract\n    */\n    @ContractsDsl public fun <R> callsInPlace(lambda:
Function<R>, kind: InvocationKind = InvocationKind.UNKNOWN): CallsInPlace\n}\n\n/**\n * Specifies how
many times a function invokes its function parameter in place.\n * See [ContractBuilder.callsInPlace] for the
details of the call-in-place function contract.\n

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*\n@ContractsDsl\n@ExperimentalContracts\n@SinceKotlin("1.3")\npublic enum class InvocationKind {\n
/**\n * A function parameter will be invoked one time or not invoked at all.\n */\n // @sample
samples.contracts.callsInPlaceAtMostOnceContract\n @ContractsDsl AT_MOST_ONCE,\n\n /**\n * A
function parameter
will be invoked one or more times.\n *\n *\n // @sample
samples.contracts.callsInPlaceAtLeastOnceContract\n @ContractsDsl AT_LEAST_ONCE,\n\n /**\n * A
function parameter will be invoked exactly one time.\n *\n *\n // @sample
samples.contracts.callsInPlaceExactlyOnceContract\n @ContractsDsl EXACTLY_ONCE,\n\n /**\n * A
function parameter is called in place, but it's unknown how many times it can be called.\n *\n *\n // @sample
samples.contracts.callsInPlaceUnknownContract\n @ContractsDsl UNKNOWN\n}\n\n/**\n * Specifies the
contract of a function.\n *\n * The contract description must be at the beginning of a function and have at least one
effect.\n *\n * Only the top-level functions can have a contract for now.\n *\n * @param builder the lambda where
the contract of a function is described with the help of the [ContractBuilder] members.\n *\n *\n // @sample
samples.contracts.returnsContract\n * @sample samples.contracts.returnsTrueContract\n *
@sample samples.contracts.returnsFalseContract\n * @sample samples.contracts.returnsNullContract\n * @sample
samples.contracts.returnsNotNullContract\n * @sample samples.contracts.callsInPlaceAtMostOnceContract\n *
@sample samples.contracts.callsInPlaceAtLeastOnceContract\n * @sample
samples.contracts.callsInPlaceExactlyOnceContract\n * @sample
samples.contracts.callsInPlaceUnknownContract\n *\n@ContractsDsl\n@ExperimentalContracts\n@InlineOnly\n@
SinceKotlin("1.3")\n@Suppress("UNUSED_PARAMETER")\npublic inline fun contract(builder:
ContractBuilder.() -> Unit) { }\n\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.coroutines\n\n/**\n * Marks coroutine context element that
intercepts coroutine continuations.\n * The coroutines framework uses [ContinuationInterceptor.Key] to retrieve the
interceptor
and\n * intercepts all coroutine continuations with [interceptContinuation] invocations.\n *\n *
[ContinuationInterceptor] behaves like a [polymorphic element][AbstractCoroutineContextKey], meaning that\n *
its implementation delegates [get][CoroutineContext.Element.get] and
[minusKey][CoroutineContext.Element.minusKey]\n * to [getPolymorphicElement] and [minusPolymorphicKey]
respectively.\n * [ContinuationInterceptor] subtypes can be extracted from the coroutine context using either
[ContinuationInterceptor.Key]\n * or subtype key if it extends [AbstractCoroutineContextKey].\n
*\n@SinceKotlin("1.3")\npublic interface ContinuationInterceptor : CoroutineContext.Element {\n\n /**\n *
The key that defines *the* context interceptor.\n *\n * companion object Key :
CoroutineContext.Key<ContinuationInterceptor>\n\n /**\n * Returns continuation that wraps the original
[continuation], thus intercepting all resumptions.\n * This function is invoked by coroutines framework
when needed and the resulting continuations are\n * cached internally per each instance of the original
[continuation].\n *\n * This function may simply return original [continuation] if it does not want to intercept
this particular continuation.\n *\n * When the original [continuation] completes, coroutine framework invokes
[releaseInterceptedContinuation]\n * with the resulting continuation if it was intercepted, that is if
`interceptContinuation` had previously\n * returned a different continuation instance.\n *\n public fun <T>
interceptContinuation(continuation: Continuation<T>): Continuation<T>\n\n /**\n * Invoked for the
continuation instance returned by [interceptContinuation] when the original\n * continuation completes and will
not be used anymore. This function is invoked only if [interceptContinuation]\n * had returned a different
continuation instance from the one it was invoked with.\n *\n * Default implementation
does nothing.\n *\n * @param continuation Continuation instance returned by this interceptor's
[interceptContinuation] invocation.\n *\n public fun releaseInterceptedContinuation(continuation:
Continuation<*>) {\n\n /* do nothing by default *\n }\n\n public override operator fun <E :
CoroutineContext.Element> get(key: CoroutineContext.Key<E>): E? {\n\n // getPolymorphicKey specialized for

```

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ContinuationInterceptor key\n    @OptIn(ExperimentalStdlibApi::class)\n    if (key is
AbstractCoroutineContextKey<*, *>) {\n        @Suppress("UNCHECKED_CAST")\n        return if
(key.isSubKey(this.key)) key.tryCast(this) as? E else null\n    }\n    @Suppress("UNCHECKED_CAST")\n    return if (ContinuationInterceptor === key) this as E else null\n }\n\n public override fun minusKey(key:
CoroutineContext.Key<*>): CoroutineContext {\n    // minusPolymorphicKey specialized for
ContinuationInterceptor key\n    @OptIn(ExperimentalStdlibApi::class)\n    if (key is AbstractCoroutineContextKey<*, *>) {\n        return if (key.isSubKey(this.key) &&
key.tryCast(this) != null) EmptyCoroutineContext else this\n    }\n    return if (ContinuationInterceptor ===
key) EmptyCoroutineContext else this\n }\n}\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\npackage kotlin.coroutines\n\n/*\n * Persistent context for the
coroutine. It is an indexed set of [Element] instances.\n * An indexed set is a mix between a set and a map.\n *
Every element in this set has a unique [Key].\n */\n@SinceKotlin("1.3")\npublic interface CoroutineContext {\n
/*\n * Returns the element with the given [key] from this context or `null`.\n */\n    public operator fun <E :
Element> get(key: Key<E>): E?\n\n /*\n * Accumulates entries
of this context starting with [initial] value and applying [operation]\n * from left to right to current accumulator
value and each element of this context.\n */\n    public fun <R> fold(initial: R, operation: (R, Element) -> R):
R\n\n /*\n * Returns a context containing elements from this context and elements from other [context].\n *
The elements from this context with the same key as in the other one are dropped.\n */\n    public operator fun
plus(context: CoroutineContext): CoroutineContext =\n    if (context === EmptyCoroutineContext) this else // fast
path -- avoid lambda creation\n        context.fold(this) { acc, element ->\n            val removed =
acc.minusKey(element.key)\n            if (removed === EmptyCoroutineContext) element else {\n                //
make sure interceptor is always last in the context (and thus is fast to get when present)\n                val interceptor
= removed[ContinuationInterceptor]\n                if (interceptor == null) CombinedContext(removed, element) else {\n                    val left =
removed.minusKey(ContinuationInterceptor)\n                    if (left === EmptyCoroutineContext)\n                        CombinedContext(element, interceptor) else\n                            CombinedContext(CombinedContext(left, element),
interceptor)\n                }\n            }\n\n /*\n * Returns a context containing elements from this
context, but without an element with\n * the specified [key].\n */\n    public fun minusKey(key: Key<*>):
CoroutineContext\n\n /*\n * Key for the elements of [CoroutineContext]. [E] is a type of element with this
key.\n */\n    public interface Key<E : Element>\n\n /*\n * An element of the [CoroutineContext]. An
element of the coroutine context is a singleton context by itself.\n */\n    public interface Element :
CoroutineContext {\n\n /*\n * A key of this coroutine context element.\n */\n        public val key: Key<*>\n\n        public override operator fun <E : Element> get(key: Key<E>): E?
= \n        @Suppress("UNCHECKED_CAST")\n        if (this.key == key) this as E else null\n\n        public
override fun <R> fold(initial: R, operation: (R, Element) -> R): R = \n        operation(initial, this)\n\n        public
override fun minusKey(key: Key<*>): CoroutineContext = \n        if (this.key == key) EmptyCoroutineContext
else this\n    }\n}\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\npackage kotlin.coroutines\n\nimport kotlin.coroutines.CoroutineContext.Element\nimport
kotlin.coroutines.CoroutineContext.Key\n\n/*\n * Base class for [CoroutineContext.Element] implementations.\n */\n@SinceKotlin("1.3")\npublic abstract class AbstractCoroutineContextElement(public
override val key: Key<*>) : Element\n\n/*\n * Base class for [CoroutineContext.Key] associated with
polymorphic [CoroutineContext.Element] implementation.\n * Polymorphic element implementation implies
delegating its [get][Element.get] and [minusKey][Element.minusKey]\n * to [getPolymorphicElement] and
[minusPolymorphicKey] respectively.\n */\n * Polymorphic elements can be extracted from the coroutine context
using both element key and its supertype key.\n * Example of polymorphic elements:\n * ```\n * open class
BaseElement : CoroutineContext.Element {\n *     companion object Key : CoroutineContext.Key<BaseElement>\n}

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* override val key: CoroutineContext.Key<*> get() = Key\n * // It is important to use getPolymorphicKey and
minusPolymorphicKey\n * override fun <E : CoroutineContext.Element> get(key: CoroutineContext.Key<E>):
E? = getPolymorphicElement(key)\n * override fun minusKey(key: CoroutineContext.Key<*>):
CoroutineContext = minusPolymorphicKey(key)\n * }\n
*\n * class DerivedElement : BaseElement() {\n * companion object Key :
AbstractCoroutineContextKey<BaseElement, DerivedElement>(BaseElement, { it as? DerivedElement })\n * }\n *
// Now it is possible to query both `BaseElement` and `DerivedElement`\n * someContext[BaseElement] // Returns
BaseElement?, non-null both for BaseElement and DerivedElement instances\n * someContext[DerivedElement] //
Returns DerivedElement?, non-null only for DerivedElement instance\n * ```\n * @param B base class of a
polymorphic element\n * @param baseKey an instance of base key\n * @param E element type associated with the
current key\n * @param safeCast a function that can safely cast abstract [CoroutineContext.Element] to the concrete
[E] type\n * and return the element if it is a subtype of [E] or `null` otherwise.\n
*/\n @SinceKotlin("1.3")\n @ExperimentalStdlibApi\n public abstract class AbstractCoroutineContextKey<B :
Element, E : B>(\n baseKey: Key<B>,\n private val safeCast:
(element: Element) -> E?) : Key<E> {\n private val topmostKey: Key<*> = if (baseKey is
AbstractCoroutineContextKey<*, *>) baseKey.topmostKey else baseKey\n\n internal fun tryCast(element:
Element): E? = safeCast(element)\n internal fun isSubKey(key: Key<*>): Boolean = key === this || topmostKey
=== key\n}\n\n/**\n * Returns the current element if it is associated with the given [key] in a polymorphic manner
or `null` otherwise.\n * This method returns non-null value if either [Element.key] is equal to the given [key] or if
the [key] is associated\n * with [Element.key] via [AbstractCoroutineContextKey].\n * See
[AbstractCoroutineContextKey] for the example of usage.\n
*/\n @SinceKotlin("1.3")\n @ExperimentalStdlibApi\n public fun <E : Element>
Element.getPolymorphicElement(key: Key<E>): E? {\n if (key is AbstractCoroutineContextKey<*, *>) {\n
@Suppress("UNCHECKED_CAST")\n return if (key.isSubKey(this.key)) key.tryCast(this) as? E else null\n
}\n @Suppress("UNCHECKED_CAST")\n
return if (this.key === key) this as E else null\n}\n\n/**\n * Returns empty coroutine context if the element is
associated with the given [key] in a polymorphic manner\n * or `null` otherwise.\n * This method returns empty
context if either [Element.key] is equal to the given [key] or if the [key] is associated\n * with [Element.key] via
[AbstractCoroutineContextKey].\n * See [AbstractCoroutineContextKey] for the example of usage.\n
*/\n @SinceKotlin("1.3")\n @ExperimentalStdlibApi\n public fun Element.minusPolymorphicKey(key: Key<*>):
CoroutineContext {\n if (key is AbstractCoroutineContextKey<*, *>) {\n return if (key.isSubKey(this.key)
&& key.tryCast(this) != null) EmptyCoroutineContext else this\n }\n return if (this.key === key)
EmptyCoroutineContext else this\n}\n\n/**\n * An empty coroutine context.\n */\n @SinceKotlin("1.3")\n public
object EmptyCoroutineContext : CoroutineContext, Serializable {\n private const val serialVersionUID:
Long = 0\n private fun readResolve(): Any = EmptyCoroutineContext\n\n public override fun <E : Element>
get(key: Key<E>): E? = null\n\n public override fun <R> fold(initial: R, operation: (R, Element) -> R): R = initial\n
\n public override fun plus(context: CoroutineContext): CoroutineContext = context\n\n public override fun
minusKey(key: Key<*>): CoroutineContext = this\n\n public override fun hashCode(): Int = 0\n\n public override
fun toString(): String = "EmptyCoroutineContext"\n}\n\n//----- internal impl -----
\n\n// this class is not exposed, but is hidden inside implementations\n// this is a left-biased list, so that `plus` works
naturally\n @SinceKotlin("1.3")\n internal class CombinedContext(\n private val left: CoroutineContext,\n
private val element: Element\n) : CoroutineContext, Serializable {\n\n override fun <E : Element> get(key:
Key<E>): E? {\n var cur = this\n while (true) {\n cur.element[key]?.let
{ return it }\n val next = cur.left\n if (next is CombinedContext) {\n cur = next\n
}\n else {\n return next[key]\n }\n }\n\n public override fun <R> fold(initial: R, operation:
(R, Element) -> R): R =\n operation(left.fold(initial, operation), element)\n\n public override fun
minusKey(key: Key<*>): CoroutineContext {\n element[key]?.let { return left }\n val newLeft =
left.minusKey(key)\n return when {\n newLeft === left -> this\n newLeft ===

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EmptyCoroutineContext -> element\n      else -> CombinedContext(newLeft, element)\n    }\n }\n\nprivate fun size(): Int {\n    var cur = this\n    var size = 2\n    while (true) {\n        cur = cur.left as?\n        CombinedContext?: return size\n        size++\n    }\n }\n\nprivate fun contains(element: Element): Boolean\n    =\n    get(element.key)\n\n    == element\n\nprivate fun containsAll(context: CombinedContext): Boolean {\n    var cur = context\n    while (true) {\n        if (!contains(cur.element)) return false\n        val next = cur.left\n        if (next is\n        CombinedContext) {\n            cur = next\n        } else {\n            return contains(next as Element)\n        }\n    }\n }\n\noverride fun equals(other: Any?): Boolean =\n    this === other || other is CombinedContext\n    && other.size() == size() && other.containsAll(this)\n\noverride fun hashCode(): Int = left.hashCode() +\n    element.hashCode()\n\noverride fun toString(): String =\n    "[" + fold("") { acc, element ->\n        if\n        (acc.isEmpty()) element.toString() else "$acc, $element"\n    } + "]\n\nprivate fun writeReplace(): Any {\n    val n = size()\n    val elements = arrayOfNulls<CoroutineContext>(n)\n    var index = 0\n    fold(Unit) { _,\n    element -> elements[index++]\n    = element }\n    check(index == n)\n    @Suppress("UNCHECKED_CAST")\n    return\n    Serialized(elements as Array<CoroutineContext>)\n }\n\nprivate class Serialized(val elements:\n    Array<CoroutineContext>) : Serializable {\n    companion object {\n        private const val serialVersionUID:\n        Long = 0L\n    }\n\n    private fun readResolve(): Any = elements.fold(EmptyCoroutineContext,\n    CoroutineContext::plus)\n }\n\n"/*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming\n    Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the\n    license/LICENSE.txt file.\n */\n\n@file:kotlin.jvm.JvmName("IntrinsicsKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage\n    kotlin.coroutines.intrinsics\n\nimport kotlin.contracts.*\nimport kotlin.coroutines.*\nimport\n    kotlin.internal.InlineOnly\n\n/**\n * Obtains the current continuation instance inside suspend functions and either\n    suspends\n * currently running\n\n    coroutine or returns result immediately without suspension.\n * If the [block] returns the special\n    [COROUTINE_SUSPENDED] value, it means that suspend function did suspend the execution and will\n * not\n    return any result immediately. In this case, the [Continuation] provided to the [block] shall be\n * resumed by\n    invoking [Continuation.resumeWith] at some moment in the\n * future when the result becomes available to resume\n    the computation.\n * Otherwise, the return value of the [block] must have a type assignable to [T] and represents\n    the result of this suspend function.\n * It means that the execution was not suspended and the [Continuation]\n    provided to the [block] shall not be invoked.\n * As the result type of the [block] is declared as `Any?` and cannot be\n    correctly type-checked,\n * its proper return type remains on the conscience of the suspend function's author.\n */\n\n * Invocation of [Continuation.resumeWith] resumes coroutine directly in the invoker's thread without\n    going through the\n * [ContinuationInterceptor] that might be present in the coroutine's [CoroutineContext].\n * It\n    is the invoker's responsibility to ensure that a proper invocation context is established.\n * [Continuation.intercepted]\n    can be used to acquire the intercepted continuation.\n * Note that it is not recommended to call either\n    [Continuation.resume] nor [Continuation.resumeWithException] functions synchronously\n * in the same\n    stackframe where suspension function is run. Use [suspendCoroutine] as a safer way to obtain current\n * continuation instance.\n */\n\n@SinceKotlin("1.3")\n@InlineOnly\n@Suppress("UNUSED_PARAMETER",\n    "RedundantSuspendModifier")\npublic suspend inline fun <T>\n    suspendCoroutineUninterceptedOrReturn(crossinline block: (Continuation<T>) -> Any?): T {\n    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    throw NotImplementedError("Implementation of\n    suspendCoroutineUninterceptedOrReturn is intrinsic")\n }\n\n/**\n * This value is\n    used as a return value of [suspendCoroutineUninterceptedOrReturn] `block` argument to state that\n * the execution\n    was suspended and will not return any result immediately.\n * Note: this value should not be used in general\n    code.** Using it outside of the context of\n * `suspendCoroutineUninterceptedOrReturn` function return value\n    (including, but not limited to,\n * storing this value in other properties, returning it from other functions, etc)\n * can\n    lead to unspecified behavior of the code.\n */\n\n// It is implemented as property with getter to avoid ProGuard

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<clinit> problem with multifile IntrinsicKt class\n@SinceKotlin("1.3")\npublic val COROUTINE_SUSPENDED:
Any get() = CoroutineSingletons.COROUTINE_SUSPENDED\n\n// Using enum here ensures two important
properties:\n// 1. It makes SafeContinuation serializable with all kinds of serialization frameworks (since all of them
natively support enums)\n// 2. It improves debugging experience, since you clearly see toString() value
of those objects and what package they come from\n@SinceKotlin("1.3")\n@PublishedApi // This class is
Published API via serialized representation of SafeContinuation, don't rename/move\ninternal enum class
CoroutineSingletons { COROUTINE_SUSPENDED, UNDECIDED, RESUMED }" , "/" * Copyright 2010-2022
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n * \n\npackage kotlin.enums\n\nimport
kotlin.jvm.Volatile\n\n/**\n * A specialized immutable implementation of [List] interface that\n * contains all enum
entries of the specified enum type [E].\n * [EnumEntries] contains all enum entries in the order they are declared in
the source code,\n * consistently with the corresponding [Enum.ordinal] values.\n * \n * An instance of this interface
can only be obtained from `EnumClass.entries` property.\n
*\n@ExperimentalStdlibApi\n@SinceKotlin("1.8")\npublic sealed
interface EnumEntries<E : Enum<E>> :
List<E>\n\n@PublishedApi\n@ExperimentalStdlibApi\n@SinceKotlin("1.8") // Used by JVM compiler\ninternal
fun <E : Enum<E>> enumEntries(entriesProvider: () -> Array<E>): EnumEntries<E> =
EnumEntriesList(entriesProvider)\n\n@PublishedApi\n@ExperimentalStdlibApi\n@SinceKotlin("1.8") // Used by
Native/JS compilers and Java serialization\ninternal fun <E : Enum<E>> enumEntries(entries: Array<E>):
EnumEntries<E> = EnumEntriesList { entries }.also {\n    /*\n     * Here we are enforcing initialization of _entries
property.\n     * It is required because of two reasons.\n     * 1. In old Native mm the object will be frozen after
creation, so it must be immutable\n     * 2. Native doesn't support @Volatile for now, so this initialization is not
generally safe, if\n     * done after object is published.\n     * \n     * This is very implementation-dependent hack,
and it should be removed when/if both reasons above are gone.\n     * \n     * it.size\n     */\n    * For enum class E, this class is instantiated in the following manner (NB it's pseudocode that does not\n     * reflect
code generation strategy precisely):\n     * ```\n     * class E extends Enum<E> {\n     *     private static final E[] $VALUES\n     *     private static final EnumEntries[] $ENTRIES\n     *     static {\n     *         $VALUES = $values();\n     *         val
supplier = #invokedynamic ..args.. values;\n     *         $ENTRIES = new EnumEntriesList(supplier);\n     *     }\n     *     public static EnumEntries<MyEnum> getEntries() {\n     *         return $ENTRIES;\n     *     }\n     *     private synthetic
static E[] $values() {\n     *         return new E[] { ... };\n     *     }\n     * }\n     * ```\n     * \n     * This machinery is required as a
workaround for a long-standing issue when people do reflectively change ` $VALUES ` of\n     * enums in order to
workaround project-specific issues.\n     * We allow racy initialization (e.g. entriesProvider can be invoked multiple
times), but the resulting array is safely\n     * published, preventing
any read races after the initialization.\n     */\n\n@SinceKotlin("1.8")\n@ExperimentalStdlibApi\nprivate class
EnumEntriesList<T : Enum<T>>(private val entriesProvider: () -> Array<T>) : EnumEntries<T>,
AbstractList<T>(), Serializable {\n    // WA for JS IR bug:\n    // class type parameter MUST be different form E
(AbstractList<E> type parameter),\n    // otherwise the bridge names for contains() and indexOf() will be clashed with
the original method names,\n    // and produced JS code will not contain type checks and will not work correctly.\n    @Volatile // Volatile is required for safe publication of the array. It doesn't incur any real-world penalties\n    private
var _entries: Array<T>? = null\n    private val entries: Array<T>\n        get() {\n            var e = _entries\n            if (e
!= null) return e\n            e = entriesProvider()\n            _entries = e\n            return e\n        }\n    override val size:
Int\n        get() = entries.size\n    override fun get(index:
Int): T {\n        val entries = entries\n        checkElementIndex(index, entries.size)\n        return entries[index]\n    }\n    // By definition, EnumEntries contains **all** enums in declaration order,\n    // thus we are able to short-
circuit the implementation here\n    override fun contains(element: T): Boolean {\n        @Suppress("SENSELESS_COMPARISON")\n        if (element === null) return false // WA for JS IR bug\n        //
Check identity due to UnsafeVariance\n        val target = entries.getOrNull(element.ordinal)\n        return target ===
element\n    }\n    override fun indexOf(element: T): Int {\n        @Suppress("SENSELESS_COMPARISON")\n

```

```

    if (element === null) return -1 // WA for JS IR bug\n    // Check identity due to UnsafeVariance\n    val
ordinal = element.ordinal\n    val target = entries.getOrNull(ordinal)\n    return if (target === element) ordinal
else -1\n } \n\n override fun lastIndexOf(element: T): Int = indexOf(element)\n\n
@Suppress("\unused") // Used for Java serialization\n private fun writeReplace(): Any {\n    return
EnumEntriesSerializationProxy(entries)\n } \n\n\ninternal expect class EnumEntriesSerializationProxy<E :
Enum<E>>(entries: Array<E>)\n", /*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.experimental\n\n/**\n * This annotation marks the experimental
[ObjCName][kotlin.native.ObjCName] annotation.\n
*\n@RequiresOptIn\n@Target(AnnotationTarget.ANNOTATION_CLASS)\n@Retention(AnnotationRetention.BI
NARY)\n@MustBeDocumented\npublic annotation class ExperimentalObjCName\n", /*\n * Copyright 2010-2022
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage
kotlin.experimental\n\n/**\n * This annotation marks the experimental Objective-C export refinement
annotations.\n
*\n@RequiresOptIn\n@Target(AnnotationTarget.ANNOTATION_CLASS)\n@Retention(AnnotationRetention.BI
NARY)\n@MustBeDocumented\npublic annotation class ExperimentalObjCRefinement\n", /*\n * Copyright 2010-
2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\npackage kotlin.experimental\n\n/**
Performs a bitwise AND operation between the two values.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.and(other: Byte): Byte =
(this.toInt() and other.toInt()).toByte()\n\n/** Performs a bitwise OR operation between the two values.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Byte.or(other: Byte): Byte =
(this.toInt() or other.toInt()).toByte()\n\n/** Performs a bitwise XOR operation
between the two values.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun
Byte.xor(other: Byte): Byte = (this.toInt() xor other.toInt()).toByte()\n\n/** Inverts the bits in this value.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Byte.inv(): Byte =
(this.toInt().inv()).toByte()\n\n/** Performs a bitwise AND operation between the two values.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.and(other: Short): Short =
(this.toInt() and other.toInt()).toShort()\n\n/** Performs a bitwise OR operation between the two values.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.or(other: Short): Short =
(this.toInt() or other.toInt()).toShort()\n\n/** Performs a bitwise XOR operation between the two values.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline infix fun Short.xor(other: Short): Short =
(this.toInt() xor other.toInt()).toShort()\n\n/**
Inverts the bits in this value.\n
*\n@SinceKotlin("1.1")\n@kotlin.internal.InlineOnly\npublic inline fun Short.inv():
Short = (this.toInt().inv()).toShort()\n\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.experimental\n\n/**\n * The experimental marker for type
inference augmenting annotations.\n * \n * Any usage of a declaration annotated with
`@ExperimentalTypeInference` must be accepted either by\n * annotating that usage with the [OptIn] annotation,
e.g. `@OptIn(ExperimentalTypeInference::class)`,\n * or by using the compiler argument `-opt-
in=kotlin.experimental.ExperimentalTypeInference`.\n */\n\n@RequiresOptIn(level =
RequiresOptIn.Level.ERROR)\n@MustBeDocumented\n@Retention(AnnotationRetention.BINARY)\n@Target(A
nnotationTarget.ANNOTATION_CLASS)\n@SinceKotlin("1.3")\npublic annotation
class ExperimentalTypeInference\n", /*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.internal\n\n/**\n * Specifies that the corresponding type should be
ignored during type inference.\n

```

`*\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\n`internal annotation class `NoInfer\n\n/**\n * Specifies that the constraint built for the type during type inference should be an equality one.\n`

`*\n@Target(AnnotationTarget.TYPE)\n@Retention(AnnotationRetention.BINARY)\n`internal annotation class `Exact\n\n/**\n * Specifies that a corresponding member has the lowest priority in overload resolution.\n`

`*\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.CONSTRUCTOR)\n@Retention(AnnotationRetention.BINARY)\n`internal annotation class `LowPriorityInOverloadResolution\n\n/**\n * Specifies that the corresponding member has the highest priority in overload resolution. Effectively this means that\n * an extension annotated with this annotation will win in overload resolution over a member with the same signature.\n`

`*\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\n`internal annotation class `HidesMembers\n\n/**\n * The value of this type parameter should be mentioned in input types (argument types, receiver type or expected type).\n`

`*\n@Target(AnnotationTarget.TYPE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\n`internal annotation class `OnlyInputTypes\n\n/**\n * Specifies that this function should not be called directly without inlining\n`

`*\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.PROPERTY_GETTER, AnnotationTarget.PROPERTY_SETTER)\n@Retention(AnnotationRetention.BINARY)\n`internal annotation class `InlineOnly\n\n/**\n * Specifies that this declaration can have dynamic receiver type.\n`

`*\n@Target(AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY)\n@Retention(AnnotationRetention.BINARY)\n`internal annotation class `DynamicExtension\n\n/**\n * The value of this parameter should be a property reference expression (this::foo), referencing a lateinit property,\n * the backing field of which is accessible at the point where the corresponding argument is passed.\n`

`*\n@Target(AnnotationTarget.VALUE_PARAMETER)\n@Retention(AnnotationRetention.BINARY)\n@SinceKotlin("1.2")\n`internal annotation class `AccessibleLateinitPropertyLiteral\n\n/**\n * Specifies that this declaration is only completely supported since the specified version.\n * The Kotlin compiler of an earlier version is going to report a diagnostic on usages of this declaration.\n * The diagnostic message can be specified with [message], or via [errorCode] (takes less space, but might not be immediately clear\n * to the user). The diagnostic severity can be specified with [level]: WARNING/ERROR`

`mean that either a warning or an error\n * is going to be reported, HIDDEN means that the declaration is going to be removed from resolution completely.\n * [versionKind] specifies which version should be compared with the [version] value, when compiling the usage of the annotated declaration.\n * Note that prior to 1.2, only [RequireKotlinVersionKind.LANGUAGE_VERSION] was supported, so the Kotlin compiler before 1.2 is going to\n * treat any [RequireKotlin] as if it requires the language version. Since 1.2, the Kotlin compiler supports\n * [RequireKotlinVersionKind.LANGUAGE_VERSION], [RequireKotlinVersionKind.COMPILER_VERSION] and [RequireKotlinVersionKind.API_VERSION].\n * If the actual value of [versionKind] is something different (e.g. a new version kind, added in future versions of Kotlin),\n * Kotlin 1.2 is going to ignore this [RequireKotlin] altogether, where as Kotlin before 1.2 is going to treat this as a requirement\n * on the language version.\n * This`

`annotation is erased at compile time; its arguments are stored in a more compact form in the Kotlin metadata.\n`

`*\n@Target(AnnotationTarget.CLASS, AnnotationTarget.FUNCTION, AnnotationTarget.PROPERTY, AnnotationTarget.CONSTRUCTOR, AnnotationTarget.TYPEALIAS)\n@Retention(AnnotationRetention.SOURCE)\n@Repeatable\n@SinceKotlin("1.2")\n`internal annotation class `RequireKotlin(\n val version: String,\n val message: String = "",\n val level: DeprecationLevel = DeprecationLevel.ERROR,\n val versionKind: RequireKotlinVersionKind = RequireKotlinVersionKind.LANGUAGE_VERSION,\n val errorCode: Int = -1)\n\n/**\n * The kind of the version that is required by [RequireKotlin].\n *@\n@SinceKotlin("1.2")\n`internal enum class


```

* The value of the property hasn't been changed yet, when this callback is invoked.\n
* If the callback returns `true` the value of the property is being set to the new value,\n
* and if the callback returns `false` the new value is discarded and the property remains its old value.\n
*\n
* @sample\n
samples.properties.Delegates.vetoableDelegate\n
*\n
* @sample\n
samples.properties.Delegates.throwVetoableDelegate\n
*\n
public inline fun <T> vetoable(initialValue: T, crossinline onChange: (property: KProperty<*>, oldValue: T, newValue: T) -> Boolean):\n
ReadWriteProperty<Any?, T> =\n
object : ObservableProperty<T>(initialValue) {\n
override fun beforeChange(property: KProperty<*>, oldValue: T, newValue: T): Boolean = onChange(property, oldValue, newValue)\n
}\n
}\n
}\n
private class NotNullVar<T : Any>(): ReadWriteProperty<Any?, T> {\n
private var value: T? = null\n
public override fun getValue(thisRef: Any?, property: KProperty<*>): T {\n
return value ?: throw IllegalStateException("\nProperty ${property.name} should be initialized before get.")\n
}\n
public override fun setValue(thisRef: Any?, property: KProperty<*>, value: T) {\n
this.value = value\n
}\n
}\n
"/*\n
* Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n
package kotlin.properties\n
import kotlin.reflect.KProperty\n
/**\n
* Base interface that can be used for implementing property delegates of read-only properties.\n
*\n
* This is provided only for convenience; you don't have to extend this interface\n
* as long as your property delegate has methods with the same signatures.\n
*\n
* @param T the type of object which owns the delegated property.\n
* @param V the type of the property value.\n
*/\n
public interface ReadOnlyProperty<in T, out V> {\n
/**\n
* Returns the value of the property for the given object.\n
*\n
* @param thisRef the object for which the value is requested.\n
*\n
* @param property the metadata for the property.\n
*\n
* @return the property value.\n
*/\n
public operator fun getValue(thisRef: T, property: KProperty<*>): V\n
}\n
/**\n
* Base interface that can be used for implementing property delegates of read-write properties.\n
*\n
* This is provided only for convenience; you don't have to extend this interface\n
* as long as your property delegate has methods with the same signatures.\n
*\n
* @param T the type of object which owns the delegated property.\n
* @param V the type of the property value.\n
*/\n
public interface ReadWriteProperty<in T, V> : ReadOnlyProperty<T, V> {\n
/**\n
* Returns the value of the property for the given object.\n
*\n
* @param thisRef the object for which the value is requested.\n
*\n
* @param property the metadata for the property.\n
*\n
* @return the property value.\n
*/\n
public override operator fun getValue(thisRef: T, property: KProperty<*>): V\n
}\n
/**\n
* Sets the value of the property for the given object.\n
*\n
* @param thisRef the object for which the value is requested.\n
*\n
* @param property the metadata for the property.\n
*\n
* @param value the value to set.\n
*/\n
public operator fun setValue(thisRef: T, property: KProperty<*>, value: V)\n
}\n
}\n
/**\n
* Base interface that can be used for implementing property delegate providers.\n
*\n
* This is provided only for convenience; you don't have to extend this interface\n
* as long as your delegate provider has a method with the same signature.\n
*\n
* @param T the type of object which owns the delegated property.\n
* @param D the type of property delegates this provider provides.\n
*/\n
@SinceKotlin("1.4")\n
public interface PropertyDelegateProvider<in T, out D> {\n
/**\n
* Returns the delegate of the property for the given object.\n
*\n
* This function can be used to extend the logic of creating the object (e.g. perform validation checks)\n
* to which the property implementation is delegated.\n
*\n
* @param thisRef the object for which property delegate is requested.\n
*\n
* @param property the metadata for the property.\n
*\n
* @return the property delegate.\n
*/\n
public operator fun provideDelegate(thisRef: T, property: KProperty<*>): D\n
}\n
"/*\n
* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n
package kotlin.properties\n
import kotlin.reflect.KProperty\n
/**\n
* Implements the core logic of a property delegate for a read/write property that calls callback functions when changed.\n
*\n
* @param initialValue the initial value of the property.\n
*/\n
public abstract class ObservableProperty<V>(initialValue: V) : ReadWriteProperty<Any?, V> {\n
private var value = initialValue\n
/**\n
* The callback which is called before a change to the property value

```

```

is attempted.\n * The value of the property hasn't been changed yet, when this callback is invoked.\n * If the
callback returns `true` the value of the property is being set to the new value,\n * and if the callback returns
`false` the new value is discarded and the property remains its old value.\n */\n protected open fun
beforeChange(property: KProperty<*>, oldValue: V, newValue: V): Boolean = true\n /**\n * The callback
which is called after the change of the property is made. The value of the property\n * has already been changed
when this callback is invoked.\n */\n protected open fun afterChange(property: KProperty<*>, oldValue: V,
newValue: V): Unit { }\n\n public override fun getValue(thisRef: Any?, property: KProperty<*>): V {\n
return value\n }\n\n public override fun setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n
val
oldValue = this.value\n
if (!beforeChange(property, oldValue, value)) {\n
return\n
}\n
this.value = value\n
afterChange(property, oldValue, value)\n
}\n}"/*\n *
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governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:Suppress("\PackageDirectoryMismatch")\npackage kotlin\n\nimport kotlin.reflect.*\n\n/**\n * An
extension operator that allows delegating a read-only property of type [V]\n * to a property reference to a property
of type [V] or its subtype.\n * @receiver A property reference to a read-only or mutable property of type [V] or
its subtype.\n * The reference is without a receiver, i.e. it either references a top-level property or\n * has the
receiver bound to it.\n * Example:\n * ```\n * class Login(val username: String)\n * val defaultLogin =
Login("Admin")\n * val defaultUsername by defaultLogin::username\n * // equivalent to\n * val defaultUserName
get() = defaultLogin.username\n * ```\n */\n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline
operator fun <V> KProperty0<V>.getValue(thisRef: Any?, property: KProperty<*>): V {\n
return
get()\n }\n\n /**\n * An extension operator that allows delegating a mutable property of type [V]\n * to a property
reference to a mutable property of the same type [V].\n * @receiver A property reference to a mutable property
of type [V].\n * The reference is without a receiver, i.e. it either references a top-level property or\n * has the
receiver bound to it.\n * Example:\n * ```\n * class Login(val username: String, var
incorrectAttemptCounter: Int = 0)\n * val defaultLogin = Login("Admin")\n * var defaultLoginAttempts by
defaultLogin::incorrectAttemptCounter\n * // equivalent to\n * var defaultLoginAttempts: Int\n * get() =
defaultLogin.incorrectAttemptCounter\n * set(value) { defaultLogin.incorrectAttemptCounter = value }\n * ```\n
*/\n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public
inline operator fun <V> KMutableProperty0<V>.setValue(thisRef: Any?, property: KProperty<*>, value: V) {\n
set(value)\n }\n\n /**\n * An extension operator that allows delegating a read-only member or extension property of
type [V]\n * to a property reference to a member or extension property of type [V] or its subtype.\n * @receiver
A property reference to a read-only or mutable property of type [V] or its subtype.\n * The reference has an unbound
receiver of type [T].\n * Example:\n * ```\n * class Login(val username: String)\n * val Login.user by
Login::username\n * // equivalent to\n * val Login.user get() = this.username\n * ```\n
*/\n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline operator fun <T, V> KProperty1<T,
V>.getValue(thisRef: T, property: KProperty<*>): V {\n
return get(thisRef)\n }\n\n /**\n * An extension operator
that allows delegating a mutable member or extension property of type [V]\n *
to a property reference to a member or extension mutable property of the same type [V].\n * @receiver A
property reference to a read-only or mutable property of type [V] or its subtype.\n * The reference has an unbound
receiver of type [T].\n * Example:\n * ```\n * class Login(val username: String, var
incorrectAttemptCounter: Int)\n * var Login.attempts by Login::incorrectAttemptCounter\n * // equivalent to\n * var
Login.attempts: Int\n * get() = this.incorrectAttemptCounter\n * set(value) { this.incorrectAttemptCounter =
value }\n * ```\n */\n @SinceKotlin("1.4")\n @kotlin.internal.InlineOnly\n public inline operator fun <T, V>
KMutableProperty1<T, V>.setValue(thisRef: T, property: KProperty<*>, value: V) {\n
set(thisRef,
value)\n }"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.random\n\nimport

```

```

kotlin.math.nextDown\n\n/**\n * An abstract class that is implemented by random number generator algorithms.\n *\n * The companion object [Random.Default] is the default instance of [Random].\n *\n * To get a seeded instance of random generator use [Random] function.\n *\n * @sample samples.random.Randoms.defaultRandom\n */\n@SinceKotlin("1.3")\npublic abstract class Random {\n\n    /**\n     * Gets the next random [bitCount] number of bits.\n     *\n     * Generates an `Int` whose lower [bitCount] bits are filled with random values and the remaining upper bits are zero.\n     *\n     * @param bitCount number of bits to generate, must be in range 0..32, otherwise the behavior is unspecified.\n     *\n     * @sample samples.random.Randoms.nextBits\n     */\n    public abstract fun nextBits(bitCount: Int): Int\n\n    /**\n     * Gets the next random `Int` from the random number generator.\n     *\n     * Generates an `Int` random value uniformly distributed between `Int.MIN_VALUE` and `Int.MAX_VALUE` (inclusive).\n     *\n     * @sample samples.random.Randoms.nextInt\n     */\n    public open fun nextInt(): Int = nextBits(32)\n\n    /**\n     * Gets the next random non-negative `Int` from the random number generator less than the specified [until] bound.\n     *\n     * Generates an `Int` random value uniformly distributed between `0` (inclusive) and the specified [until] bound (exclusive).\n     *\n     * @param until must be positive.\n     *\n     * @throws IllegalArgumentException if [until] is negative or zero.\n     *\n     * @sample samples.random.Randoms.nextIntFromUntil\n     */\n    public open fun nextInt(until: Int): Int = nextInt(0, until)\n\n    /**\n     * Gets the next random `Int` from the random number generator in the specified range.\n     *\n     * Generates an `Int` random value uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n     *\n     * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n     *\n     * @sample samples.random.Randoms.nextIntFromUntil\n     */\n    public open fun nextInt(from: Int, until: Int): Int {\n        checkRangeBounds(from, until)\n        val n = until - from\n        if (n > 0 || n == Int.MIN_VALUE) {\n            val rnd = if (n and -n == n) {\n                val bitCount = fastLog2(n)\n                nextBits(bitCount)\n            } else {\n                var v: Int\n                do {\n                    val bits = nextInt().ushr(1)\n                    v = bits % n\n                } while (bits - v + (n - 1) < 0)\n                v\n            }\n            return from + rnd\n        } else {\n            while (true) {\n                val rnd = nextInt()\n                if (rnd in from until until) return rnd\n            }\n        }\n    }\n\n    /**\n     * Gets the next random `Long` from the random number generator.\n     *\n     * Generates a `Long` random value uniformly distributed between `Long.MIN_VALUE` and `Long.MAX_VALUE` (inclusive).\n     *\n     * @sample samples.random.Randoms.nextLong\n     */\n    public open fun nextLong(): Long = nextInt().toLong().shl(32) + nextInt()\n\n    /**\n     * Gets the next random non-negative `Long` from the random number generator less than the specified [until] bound.\n     *\n     * Generates a `Long` random value uniformly distributed between `0` (inclusive) and the specified [until] bound (exclusive).\n     *\n     * @param until must be positive.\n     *\n     * @throws IllegalArgumentException if [until] is negative or zero.\n     *\n     * @sample samples.random.Randoms.nextLongFromUntil\n     */\n    public open fun nextLong(until: Long): Long = nextLong(0, until)\n\n    /**\n     * Gets the next random `Long` from the random number generator in the specified range.\n     *\n     * Generates a `Long` random value uniformly distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n     *\n     * @throws IllegalArgumentException if [from] is greater than or equal to [until].\n     *\n     * @sample samples.random.Randoms.nextLongFromUntil\n     */\n    public open fun nextLong(from: Long, until: Long): Long {\n        checkRangeBounds(from, until)\n        val n = until - from\n        if (n > 0) {\n            val rnd: Long\n            if (n and -n == n) {\n                val nLow = n.toInt()\n                val nHigh = (n ushr 32).toInt()\n                rnd = when {\n                    nLow != 0 -> {\n                        val bitCount = fastLog2(nLow)\n                        //\n                        toUInt().toLong()\n                            nextBits(bitCount).toLong() and 0xFFFF_FFFF\n                    }\n                    nHigh == 1 ->{\n                        // toUInt().toLong()\n                            nextInt().toLong() and 0xFFFF_FFFF\n                    }\n                    else -> {\n                        val bitCount = fastLog2(nHigh)\n                        nextBits(bitCount).toLong().shl(32) + (nextInt().toLong() and 0xFFFF_FFFF)\n                    }\n                } else {\n                    var v: Long\n                    do {\n                        val bits = nextLong().ushr(1)\n                        v = bits % n\n                    } while (bits - v + (n - 1) < 0)\n                    rnd = v\n                }\n                return from + rnd\n            } else {\n                while (true) {\n                    val rnd = nextLong()\n                    if (rnd in from until until) return rnd\n                }\n            }\n        }\n    }\n\n    /**\n     * Gets the

```



```

next random [Boolean] value.\n * \n * @sample samples.random.Randoms.nextBoolean\n * \n public open
fun nextBoolean(): Boolean = nextBits(1) != 0\n\n /** \n * Gets the next random [Double] value uniformly
distributed between 0 (inclusive) and 1 (exclusive).\n * \n * @sample samples.random.Randoms.nextDouble\n
* \n public open fun nextDouble(): Double = doubleFromParts(nextBits(26), nextBits(27))\n\n
/** \n * Gets the next random non-negative `Double` from the random number generator less than the specified
[until] bound.\n * \n * Generates a `Double` random value uniformly distributed between 0 (inclusive) and
[until] (exclusive).\n * \n * @throws IllegalArgumentException if [until] is negative or zero.\n * \n *
@sample samples.random.Randoms.nextDoubleFromUntil\n * \n public open fun nextDouble(until: Double):
Double = nextDouble(0.0, until)\n\n /** \n * Gets the next random `Double` from the random number generator
in the specified range.\n * \n * Generates a `Double` random value uniformly distributed between the specified
[from] (inclusive) and [until] (exclusive) bounds.\n * \n * [from] and [until] must be finite otherwise the
behavior is unspecified.\n * \n * @throws IllegalArgumentException if [from] is greater than or equal to
[until].\n * \n * @sample samples.random.Randoms.nextDoubleFromUntil\n
* \n public open fun nextDouble(from: Double, until: Double): Double {\n    checkRangeBounds(from,
until)\n    val size = until - from\n    val r = if (size.isInfinite() && from.isFinite() && until.isFinite()) {\n
val r1 = nextDouble() * (until / 2 - from / 2)\n    from + r1 + r1\n    } else {\n    from + nextDouble() *
size\n    }\n    return if (r >= until) until.nextDown() else r\n    }\n\n /** \n * Gets the next random [Float]
value uniformly distributed between 0 (inclusive) and 1 (exclusive).\n * \n * @sample
samples.random.Randoms.nextFloat\n * \n public open fun nextFloat(): Float = nextBits(24) / (1 shl
24).toFloat()\n\n /** \n * Fills a subrange of the specified byte [array] starting from [fromIndex] inclusive and
ending [toIndex] exclusive\n * with random bytes.\n * \n * @return [array] with the subrange filled with
random bytes.\n * \n * @sample samples.random.Randoms.nextBytes\n
* \n public open fun nextBytes(array: ByteArray, fromIndex: Int = 0, toIndex: Int = array.size): ByteArray {\n
    require(fromIndex in 0..array.size && toIndex in 0..array.size) { "\nfromIndex ($fromIndex) or toIndex ($toIndex)
are out of range: 0..${array.size}." }\n    require(fromIndex <= toIndex) { "\nfromIndex ($fromIndex) must be not
greater than toIndex ($toIndex)." }\n    val steps = (toIndex - fromIndex) / 4\n    var position = fromIndex\n
repeat(steps) {\n    val v = nextInt()\n    array[position] = v.toByte()\n    array[position + 1] =
v.ushr(8).toByte()\n    array[position + 2] = v.ushr(16).toByte()\n    array[position + 3] =
v.ushr(24).toByte()\n    position += 4\n    }\n    val remainder = toIndex - position\n    val vr =
nextInt(remainder * 8)\n    for (i in 0 until remainder) {\n    array[position + i] = vr.ushr(i * 8).toByte()\n
}\n    return
array\n    }\n\n /** \n * Fills the specified byte [array] with random bytes and returns it.\n * \n * @return
[array] filled with random bytes.\n * \n * @sample samples.random.Randoms.nextBytes\n * \n public open
fun nextBytes(array: ByteArray): ByteArray = nextBytes(array, 0, array.size)\n\n /** \n * Creates a byte array of
the specified [size], filled with random bytes.\n * \n * @sample samples.random.Randoms.nextBytes\n * \n
public open fun nextBytes(size: Int): ByteArray = nextBytes(ByteArray(size))\n\n /** \n * The default random
number generator.\n * \n * On JVM this generator is thread-safe, its methods can be invoked from multiple
threads.\n * \n * @sample samples.random.Randoms.defaultRandom\n * \n companion object Default :
Random(), Serializable {\n    private val defaultRandom: Random = defaultPlatformRandom()\n    private
object Serialized : Serializable {\n    private const
val serialVersionUID = 0L\n    private fun readResolve(): Any = Random\n    }\n    private fun
writeReplace(): Any = Serialized\n    override fun nextBits(bitCount: Int): Int =
defaultRandom.nextBits(bitCount)\n    override fun nextInt(): Int = defaultRandom.nextInt()\n    override fun
nextInt(until: Int): Int = defaultRandom.nextInt(until)\n    override fun nextInt(from: Int, until: Int): Int =
defaultRandom.nextInt(from, until)\n    override fun nextLong(): Long = defaultRandom.nextLong()\n
override fun nextLong(until: Long): Long = defaultRandom.nextLong(until)\n    override fun nextLong(from:
Long, until: Long): Long = defaultRandom.nextLong(from, until)\n    override fun nextBoolean(): Boolean =
defaultRandom.nextBoolean()\n    override fun nextDouble(): Double = defaultRandom.nextDouble()\n

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override fun nextDouble(until: Double): Double = defaultRandom.nextDouble(until)\n    override fun
nextDouble(from:
    Double, until: Double): Double = defaultRandom.nextDouble(from, until)\n    override fun nextFloat(): Float =
defaultRandom.nextFloat()\n    override fun nextBytes(array: ByteArray): ByteArray =
defaultRandom.nextBytes(array)\n    override fun nextBytes(size: Int): ByteArray =
defaultRandom.nextBytes(size)\n    override fun nextBytes(array: ByteArray, fromIndex: Int, toIndex: Int):
ByteArray =\n    defaultRandom.nextBytes(array, fromIndex, toIndex)\n    } \n\n/**\n * Returns a repeatable
random number generator seeded with the given [seed] `Int` value.\n *\n * Two generators with the same seed
produce the same sequence of values within the same version of Kotlin runtime.\n *\n * *Note:* Future versions of
Kotlin may change the algorithm of this seeded number generator so that it will return\n * a sequence of values
different from the current one for a given seed.\n *\n * On JVM the returned generator is NOT thread-safe. Do not
invoke it from multiple threads
    without proper synchronization.\n *\n * @sample samples.random.Randoms.seededRandom\n
*/\n\n@SinceKotlin("1.3")\npublic fun Random(seed: Int): Random = XorWowRandom(seed, seed.shr(31))\n\n/**\n * Returns a repeatable random number generator seeded with the given [seed] `Long` value.\n *\n * Two generators
with the same seed produce the same sequence of values within the same version of Kotlin runtime.\n *\n * *Note:*
Future versions of Kotlin may change the algorithm of this seeded number generator so that it will return\n * a
sequence of values different from the current one for a given seed.\n *\n * On JVM the returned generator is NOT
thread-safe. Do not invoke it from multiple threads without proper synchronization.\n *\n * @sample
samples.random.Randoms.seededRandom\n */\n\n@SinceKotlin("1.3")\npublic fun Random(seed: Long): Random =
XorWowRandom(seed.toInt(), seed.shr(32).toInt())\n\n/**\n * Gets the next random `Int` from the random
number generator in the specified [range].\n
*\n * Generates an `Int` random value uniformly distributed in the specified [range]:\n * from `range.start` inclusive
to `range.endInclusive` inclusive.\n *\n * @throws IllegalArgumentException if [range] is empty.\n
*/\n\n@SinceKotlin("1.3")\npublic fun Random.nextInt(range: IntRange): Int = when { \n    range.isEmpty() -> throw
IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last < Int.MAX_VALUE ->
nextInt(range.first, range.last + 1)\n    range.first > Int.MIN_VALUE -> nextInt(range.first - 1, range.last) + 1\n
else -> nextInt()\n } \n\n/**\n * Gets the next random `Long` from the random number generator in the specified
[range].\n *\n * Generates a `Long` random value uniformly distributed in the specified [range]:\n * from
`range.start` inclusive to `range.endInclusive` inclusive.\n *\n * @throws IllegalArgumentException if [range] is
empty.\n */\n\n@SinceKotlin("1.3")\npublic fun Random.nextLong(range: LongRange): Long = when { \n    range.isEmpty()
-> throw IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last <
Long.MAX_VALUE -> nextLong(range.first, range.last + 1)\n    range.first > Long.MIN_VALUE ->
nextLong(range.first - 1, range.last) + 1\n    else -> nextLong()\n } \n\n\ninternal expect fun
defaultPlatformRandom(): Random\n\ninternal expect fun doubleFromParts(hi26: Int, low27: Int): Double\n\ninternal
fun fastLog2(value: Int): Int = 31 - value.countLeadingZeroBits()\n\n/**\n * Takes upper [bitCount] bits (0..32) from
this number.\n */\n\ninternal fun Int.takeUpperBits(bitCount: Int): Int =\n    this.ushr(32 - bitCount) and (-
bitCount).shr(31)\n\ninternal fun checkRangeBounds(from: Int, until: Int) = require(until > from) {
    boundsErrorMessage(from, until) }\n\ninternal fun checkRangeBounds(from: Long, until: Long) = require(until >
from) { boundsErrorMessage(from, until) }\n\ninternal fun checkRangeBounds(from: Double, until: Double) =
require(until > from) { boundsErrorMessage(from, until) }\n\ninternal
    fun boundsErrorMessage(from: Any, until: Any) = "Random range is empty: [$from, $until].\n", "/" \n\n *
Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is
governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n\npackage
kotlin.random\n\n/**\n * Gets the next random [UInt] from the random number generator.\n *\n * Generates a
[UInt] random value uniformly distributed between [UInt.MIN_VALUE] and [UInt.MAX_VALUE] (inclusive).\n
*/\n\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun

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Random.nextInt(): UInt = nextInt().toUInt()\n\n/**\n * Gets the next random [UInt] from the random number
generator less than the specified [until] bound.\n *\n * Generates a [UInt] random value uniformly distributed
between `0` (inclusive) and the specified [until] bound (exclusive).\n *\n * @throws IllegalArgumentException if
[until] is zero.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic
fun Random.nextInt(until: UInt): UInt = nextUInt(0u, until)\n\n/**\n * Gets the next random [UInt] from the
random number generator in the specified range.\n *\n * Generates a [UInt] random value uniformly distributed
between the specified [from] (inclusive) and [until] (exclusive) bounds.\n *\n * @throws IllegalArgumentException
if [from] is greater than or equal to [until].\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextInt(from: UInt, until: UInt): UInt {\n    checkUIntRangeBounds(from, until)\n\n    val signedFrom =
from.toInt() xor Int.MIN_VALUE\n    val signedUntil = until.toInt() xor Int.MIN_VALUE\n\n    val signedResult =
nextInt(signedFrom, signedUntil) xor Int.MIN_VALUE\n    return signedResult.toUInt()\n}\n\n/**\n * Gets the next
random [UInt] from the random number generator in the specified [range].\n *\n * Generates a [UInt] random value
uniformly distributed
in the specified [range]:\n *\n * from `range.start` inclusive to `range.endInclusive` inclusive.\n *\n * @throws
IllegalArgumentException if [range] is empty.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextInt(range: UIntRange): UInt = when {\n    range.isEmpty() -> throw
IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last < UInt.MAX_VALUE ->
nextInt(range.first, range.last + 1u)\n    range.first > UInt.MIN_VALUE -> nextUInt(range.first - 1u, range.last) +
1u\n    else -> nextUInt()\n}\n\n/**\n * Gets the next random [ULong] from the random number generator.\n *\n *
Generates a [ULong] random value uniformly distributed between [ULong.MIN_VALUE] and
[ULong.MAX_VALUE] (inclusive).\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(): ULong = nextLong().toULong()\n\n/**\n * Gets the next random [ULong] from the random
number generator
less than the specified [until] bound.\n *\n * Generates a [ULong] random value uniformly distributed between `0`
(inclusive) and the specified [until] bound (exclusive).\n *\n * @throws IllegalArgumentException if [until] is
zero.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(until: ULong): ULong = nextULong(0uL, until)\n\n/**\n * Gets the next random [ULong] from
the random number generator in the specified range.\n *\n * Generates a [ULong] random value uniformly
distributed between the specified [from] (inclusive) and [until] (exclusive) bounds.\n *\n * @throws
IllegalArgumentException if [from] is greater than or equal to [until].\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(from: ULong, until: ULong): ULong {\n    checkULongRangeBounds(from, until)\n\n    val
signedFrom = from.toLong() xor Long.MIN_VALUE\n    val signedUntil = until.toLong() xor
Long.MIN_VALUE\n\n    val signedResult = nextLong(signedFrom, signedUntil) xor Long.MIN_VALUE\n    return
signedResult.toULong()\n}\n\n/**\n * Gets the next random [ULong] from the random number generator in the
specified [range].\n *\n * Generates a [ULong] random value uniformly distributed in the specified [range]:\n *\n *
from `range.start` inclusive to `range.endInclusive` inclusive.\n *\n * @throws IllegalArgumentException if [range] is
empty.\n */\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
Random.nextULong(range: ULongRange): ULong = when {\n    range.isEmpty() -> throw
IllegalArgumentException("Cannot get random in empty range: $range")\n    range.last < ULong.MAX_VALUE -
> nextULong(range.first, range.last + 1u)\n    range.first > ULong.MIN_VALUE -> nextULong(range.first - 1u,
range.last) + 1u\n    else -> nextULong()\n}\n\n/**\n * Fills the specified unsigned byte [array] with random bytes
and returns it.\n *\n * @return [array] filled with

```

```

random bytes.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Random.nextUBytes(array: UByteArray): UByteArray {\n  nextBytes(array.asByteArray())\n  return
array\n}\n\n/**\n * Creates an unsigned byte array of the specified [size], filled with random bytes.\n
*\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun Random.nextUBytes(size: Int): UByteArray
= nextBytes(size).asUByteArray()\n\n/**\n * Fills a subrange of the specified `UByte` [array] starting from
[fromIndex] inclusive and ending [toIndex] exclusive with random UBytes.\n *\n * @return [array] with the
subrange filled with random bytes.\n *\n@SinceKotlin("1.3")\n@ExperimentalUnsignedTypes\npublic fun
Random.nextUBytes(array: UByteArray, fromIndex: Int = 0, toIndex: Int = array.size): UByteArray {\n
  nextBytes(array.asByteArray(), fromIndex, toIndex)\n  return array\n}\n\ninternal fun
checkUIntRangeBounds(from: UInt, until: UInt) = require(until > from) { boundsErrorMessage(from,
  until) }\ninternal fun checkULongRangeBounds(from: ULong, until: ULong) = require(until > from) {
  boundsErrorMessage(from, until) }\n", "/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n *\n@package kotlin.random\n\n/**\n * Random number generator, using Marsaglia's
`xorwow` algorithm\n *\n * Cycles after 2^192 - 2^32 repetitions.\n *\n * For more details, see Marsaglia, George
(July 2003). "Xorshift RNGs". Journal of Statistical Software. 8 (14). doi:10.18637/jss.v008.i14\n *\n * Available
at https://www.jstatsoft.org/v08/i14/paper\n *\n@internal class XorWowRandom internal constructor(\n  private
var x: Int,\n  private var y: Int,\n  private var z: Int,\n  private var w: Int,\n  private var v: Int,\n  private var
addend: Int\n) : Random(), Serializable {\n\n  internal constructor(seed1: Int, seed2: Int) : \n
  this(seed1, seed2, 0, 0, seed1.inv(), (seed1 shl 10) xor (seed2 ushr 4))\n\n  init {\n    require((x or y or z
or w or v) != 0) { "Initial state must have at least one non-zero element." }\n\n    // some trivial seeds can
produce several values with zeroes in upper bits, so we discard first 64\n    repeat(64) { nextInt() }\n  }\n\n
  override fun nextInt(): Int {\n    // Equivalent to the xorwow algorithm\n    // From Marsaglia, G. 2003. Xorshift
RNGs. J. Statis. Soft. 8, 14, p. 5\n    var t = x\n    t = t xor (t ushr 2)\n    x = y\n    y = z\n    z = w\n
val v0 = v\n    w = v0\n    t = (t xor (t shl 1)) xor v0 xor (v0 shl 4)\n    v = t\n    addend += 362437\n
return t + addend\n  }\n\n  override fun nextBits(bitCount: Int): Int =\n    nextInt().takeUpperBits(bitCount)\n\n
  private companion object {\n    private const val serialVersionUID: Long = 0L\n  }\n}\n", "/*\n * Copyright
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JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\n@n// Auto-generated file. DO NOT
EDIT!\n@package kotlin.ranges\n\n/**\n * An iterator over a progression of values of type `Char`.\n *\n * @property
step the number by which the value is incremented on each step.\n *\n@internal class CharProgressionIterator(first:
Char, last: Char, val step: Int) : CharIterator() {\n  private val finalElement: Int = last.code\n  private var hasNext:
Boolean = if (step > 0) first <= last else first >= last\n  private var next: Int = if (hasNext) first.code else
finalElement\n\n  override fun hasNext(): Boolean = hasNext\n\n  override fun nextChar(): Char {\n    val value
= next\n    if (value == finalElement) {\n      if (!hasNext) throw kotlin.NoSuchElementException()\n
hasNext = false\n    }\n    else {\n      next
+= step\n    }\n    return value.toChar()\n  }\n}\n\n/**\n * An iterator over a progression of values of type
`Int`.\n *\n * @property step the number by which the value is incremented on each step.\n *\n@internal class
IntProgressionIterator(first: Int, last: Int, val step: Int) : IntIterator() {\n  private val finalElement: Int = last\n
private var hasNext: Boolean = if (step > 0) first <= last else first >= last\n  private var next: Int = if (hasNext) first
else finalElement\n\n  override fun hasNext(): Boolean = hasNext\n\n  override fun nextInt(): Int {\n    val
value = next\n    if (value == finalElement) {\n      if (!hasNext) throw kotlin.NoSuchElementException()\n
hasNext = false\n    }\n    else {\n      next += step\n    }\n    return value\n  }\n}\n\n/**\n * An
iterator over a progression of values of type `Long`.\n *\n * @property step the number by which the value is
incremented on each step.\n *\n@internal class
LongProgressionIterator(first: Long, last: Long, val step: Long) : LongIterator() {\n  private val finalElement:
Long = last\n  private var hasNext: Boolean = if (step > 0) first <= last else first >= last\n  private var next: Long

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= if (hasNext) first else finalElement\n\n    override fun hasNext(): Boolean = hasNext\n\n    override fun
nextLong(): Long {\n        val value = next\n        if (value == finalElement) {\n            if (!hasNext) throw
kotlin.NoSuchElementException()\n            hasNext = false\n        }\n        else {\n            next += step\n        }\n        return value\n    }\n}\n\n"/\n\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\n// Auto-generated file. DO NOT EDIT!\n\npackage kotlin.ranges\n\nimport
kotlin.internal.getProgressionLastElement\n\n/**\n * A progression of values of type
`Char`.\n */\n\npublic open class CharProgression\n    internal constructor\n        (\n            start: Char,\n            endInclusive: Char,\n            step: Int\n        ) : Iterable<Char> {\n    init {\n        if (step == 0) throw
kotlin.IllegalArgumentException("Step must be non-zero.")\n        if (step == Int.MIN_VALUE) throw
kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to avoid overflow on negation.")\n    }\n\n    /**\n     * The first element in the progression.\n     */\n    public val first: Char = start\n\n    /**\n     * The
last element in the progression.\n     */\n    public val last: Char = getProgressionLastElement(start.code,
endInclusive.code, step).toChar()\n\n    /**\n     * The step of the progression.\n     */\n    public val step: Int =
step\n\n    override fun iterator(): CharIterator = CharProgressionIterator(first, last, step)\n\n    /**\n     * Checks if
the progression is empty.\n     */\n    * Progression with a positive step
is empty if its first element is greater than the last element.\n    * Progression with a negative step is empty if its
first element is less than the last element.\n    */\n    public open fun isEmpty(): Boolean = if (step > 0) first > last
else first < last\n\n    override fun equals(other: Any?): Boolean =\n        other is CharProgression && (isEmpty()
&& other.isEmpty()) ||\n        first == other.first && last == other.last && step == other.step)\n\n    override fun
hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (31 * first.code + last.code) + step)\n\n    override fun toString():
String = if (step > 0) "$first..$last step $step" else "$first downTo $last step ${-step}"\n\n    companion object {\n
        /**\n         * Creates CharProgression within the specified bounds of a closed range.\n         */\n        * The
progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not excluding it, with the
specified [step].\n         */\n        * In order
to go backwards the [step] must be negative.\n         */\n        * [step] must be greater than `Int.MIN_VALUE` and
not equal to zero.\n         */\n        public fun fromClosedRange(rangeStart: Char, rangeEnd: Char, step: Int):
CharProgression = CharProgression(rangeStart, rangeEnd, step)\n    }\n}\n\n/**\n * A progression of values of type
`Int`.\n */\n\npublic open class IntProgression\n    internal constructor\n        (\n            start: Int,\n            endInclusive:
Int,\n            step: Int\n        ) : Iterable<Int> {\n    init {\n        if (step == 0) throw
kotlin.IllegalArgumentException("Step must be non-zero.")\n        if (step == Int.MIN_VALUE) throw
kotlin.IllegalArgumentException("Step must be greater than Int.MIN_VALUE to avoid overflow on negation.")\n    }\n\n    /**\n     * The first element in the progression.\n     */\n    public val first: Int = start\n\n    /**\n     * The last
element in the progression.\n     */\n    public val last: Int = getProgressionLastElement(start,
endInclusive, step)\n\n    /**\n     * The step of the progression.\n     */\n    public val step: Int = step\n\n    override
fun iterator(): IntIterator = IntProgressionIterator(first, last, step)\n\n    /**\n     * Checks if the progression is
empty.\n     */\n    * Progression with a positive step is empty if its first element is greater than the last element.\n
* Progression with a negative step is empty if its first element is less than the last element.\n    */\n    public open
fun isEmpty(): Boolean = if (step > 0) first > last else first < last\n\n    override fun equals(other: Any?): Boolean =\n
        other is IntProgression && (isEmpty() && other.isEmpty()) ||\n        first == other.first && last == other.last &&
step == other.step)\n\n    override fun hashCode(): Int =\n        if (isEmpty()) -1 else (31 * (31 * first + last) +
step)\n\n    override fun toString(): String = if (step > 0) "$first..$last step $step" else "$first downTo $last step ${-
step}"\n\n    companion object {\n        /**\n         * Creates IntProgression within the specified bounds of a closed range.\n
         */\n        * The progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not excluding it,
with the specified [step].\n         */\n        * In order to go backwards the [step] must be negative.\n         */\n        * [step] must
be greater than `Int.MIN_VALUE` and not equal to zero.\n         */\n        public fun fromClosedRange(rangeStart:
Int, rangeEnd: Int, step: Int): IntProgression = IntProgression(rangeStart, rangeEnd, step)\n    }\n}\n\n/**\n * A

```

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progression of values of type `Long`.
public open class LongProgression(
    internal constructor(
        start: Long,
        endInclusive: Long,
        step: Long
    ): Iterable<Long> {
    init {
        if (step == 0L) throw kotlin.IllegalArgumentException("Step must be non-zero.")
        if (step == Long.MIN_VALUE)
            throw kotlin.IllegalArgumentException("Step
                must be greater than Long.MIN_VALUE to avoid overflow on negation.")
    }
    /**
     * The first element in the progression.
     */
    public val first: Long = start
    /**
     * The last element in the progression.
     */
    public val last: Long = getProgressionLastElement(start, endInclusive, step)
    /**
     * The step of the progression.
     */
    public val step: Long = step
    override fun iterator(): LongIterator =
        LongProgressionIterator(first, last, step)
    /**
     * Checks if the progression is empty.
     */
    * Progression with a positive step is empty if its first element is greater than the last element.
    * Progression with a negative step is empty if its first element is less than the last element.
    public open fun isEmpty(): Boolean =
        if (step > 0) first > last else first < last
    override fun equals(other: Any?): Boolean =
        other is LongProgression && (isEmpty() && other.isEmpty())
    ||
        first == other.first && last == other.last && step == other.step
    override fun hashCode(): Int =
        if (isEmpty()) -1 else (31 * (31 * (first xor (first ushr 32)) + (last xor (last ushr 32))) + (step xor (step ushr 32))).toInt()
    override fun toString(): String =
        if (step > 0) "$first..$last step $step" else "$first downTo $last step ${-step}"
    companion object {
        /**
         * Creates LongProgression within the specified bounds of a closed range.
         */
        * The progression starts with the [rangeStart] value and goes toward the [rangeEnd] value not excluding it, with the specified [step].
        * In order to go backwards the [step] must be negative.
        * [step] must be greater than `Long.MIN_VALUE` and not equal to zero.
        public fun fromClosedRange(rangeStart: Long, rangeEnd: Long, step: Long): LongProgression =
            LongProgression(rangeStart, rangeEnd, step)
    }
}

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package kotlin.ranges
/**
 * Represents a range of values (for example, numbers or characters) where both the lower and upper bounds are included in the range.
 * See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/ranges.html) for more information.
 */
public interface ClosedRange<T : Comparable<T>> {
    /**
     * The minimum value in the range.
     */
    public val start: T
    /**
     * The maximum value in the range (inclusive).
     */
    public val endInclusive: T
    /**
     * Checks whether the specified [value] belongs to the range.
     */
    * A value belongs to the closed range if it is greater than or equal to the [start] bound and less than or equal to the [endInclusive] bound.
    public operator fun contains(value: T): Boolean = value >= start && value <= endInclusive
    /**
     * Checks whether the range is empty.
     */
    * The range is empty if its start value is greater than the end value.
    public fun isEmpty(): Boolean = start > endInclusive
}

/**
 * Represents a range of values (for example, numbers or characters) where the upper bound is not included in the range.
 * See the [Kotlin language documentation](https://kotlinlang.org/docs/reference/ranges.html) for more information.
 */
@SinceKotlin("1.7")
@ExperimentalStdlibApi
public interface OpenEndRange<T : Comparable<T>> {
    /**
     * The minimum value in the range.
     */
    public val start: T
    /**
     * The maximum value in the range (exclusive).
     */
    * @throws IllegalStateException can be thrown if the exclusive end bound cannot be represented with a value of type [T].
    public val endExclusive: T
    /**
     * Checks whether the specified [value] belongs to the range.
     */
    * A value belongs to the open-ended range if it is greater than or equal to the [start] bound and strictly less than the [endExclusive] bound.
    public operator fun contains(value: T): Boolean = value >= start && value < endExclusive
    /**
     * Checks whether the range is empty.
     */
    * The open-ended range is empty if its start value is greater than or equal to the end value.
    public fun isEmpty(): Boolean = start >= endExclusive
}

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```

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* \n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("RangesKt")\n\npackage
kotlin.ranges\n\n/**\n * Represents a range of [Comparable] values.\n * \nprivate open class ComparableRange<T :
Comparable<T>>(\n    override val start: T,\n        override val endInclusive: T\n    ) : ClosedRange<T> {\n\n    override fun equals(other: Any?): Boolean {\n
return other is ComparableRange<*> && (isEmpty() && other.isEmpty() ||\n        start == other.start &&
endInclusive == other.endInclusive)\n    }\n\n    override fun hashCode(): Int {\n        return if (isEmpty()) -1 else 31
* start.hashCode() + endInclusive.hashCode()\n    }\n\n    override fun toString(): String =
"\$start..\$endInclusive"\n}\n\n/**\n * Creates a range from this [Comparable] value to the specified [that] value.\n
*\n * This value needs to be smaller than or equal to [that] value, otherwise the returned range will be empty.\n *
*\n * @sample samples.ranges.Ranges.rangeFromComparable\n * \npublic operator fun <T : Comparable<T>>
T.rangeTo(that: T): ClosedRange<T> = ComparableRange(this, that)\n\n/**\n * Represents a range of [Comparable]
values.\n * \n@OptIn(ExperimentalStdlibApi::class)\nprivate open class ComparableOpenEndRange<T :
Comparable<T>>(\n    override val start: T,\n        override val endExclusive: T\n    ) : OpenEndRange<T> {\n\n    override fun equals(other:
Any?): Boolean {\n        return other is ComparableOpenEndRange<*> && (isEmpty() && other.isEmpty() ||\n            start == other.start && endExclusive == other.endExclusive)\n    }\n\n    override fun hashCode(): Int {\n
return if (isEmpty()) -1 else 31 * start.hashCode() + endExclusive.hashCode()\n    }\n\n    override fun toString():
String = "\$start..\$endExclusive"\n}\n\n/**\n * Creates an open-ended range from this [Comparable] value to the
specified [that] value.\n * \n * This value needs to be smaller than [that] value, otherwise the returned range will be
empty.\n * \n * @sample samples.ranges.Ranges.rangeFromComparable\n
*\n@SinceKotlin("1.7")\n@ExperimentalStdlibApi\npublic operator fun <T : Comparable<T>>
T.rangeUntil(that: T): OpenEndRange<T> = ComparableOpenEndRange(this, that)\n\n/**\n * Represents a range
of floating point numbers.\n * \n * Extends
[ClosedRange] interface providing custom operation [lessThanOrEquals] for comparing values of range domain
type.\n * \n * This interface is implemented by floating point ranges returned by [Float.rangeTo] and
[Double.rangeTo] operators to\n * achieve IEEE-754 comparison order instead of total order of floating point
numbers.\n * \n@SinceKotlin("1.1")\npublic interface ClosedFloatingPointRange<T : Comparable<T>> :
ClosedRange<T> {\n    override fun contains(value: T): Boolean = lessThanOrEquals(start, value) &&
lessThanOrEquals(value, endInclusive)\n    override fun isEmpty(): Boolean = !lessThanOrEquals(start,
endInclusive)\n\n    /**\n     * Compares two values of range domain type and returns true if first is less than or
equal to second.\n     * \n     * fun lessThanOrEquals(a: T, b: T): Boolean\n    }\n\n/**\n * A closed range of values of
type `Double`.\n * \n * Numbers are compared with the ends of this range according to IEEE-754.\n * \nprivate class
ClosedDoubleRange(\n    start:
Double,\n    endInclusive: Double\n    ) : ClosedFloatingPointRange<Double> {\n    private val _start = start\n
private val _endInclusive = endInclusive\n    override val start: Double get() = _start\n    override val endInclusive:
Double get() = _endInclusive\n\n    override fun lessThanOrEquals(a: Double, b: Double): Boolean = a <= b\n\n
override fun contains(value: Double): Boolean = value >= _start && value <= _endInclusive\n    override fun
isEmpty(): Boolean = !(_start <= _endInclusive)\n    override fun equals(other: Any?): Boolean {\n        return
other is ClosedDoubleRange && (isEmpty() && other.isEmpty() ||\n            _start == other._start &&
_endInclusive == other._endInclusive)\n    }\n\n    override fun hashCode(): Int {\n        return if (isEmpty()) -1 else
31 * _start.hashCode() + _endInclusive.hashCode()\n    }\n\n    override fun toString(): String =
"\$ _start..\$ _endInclusive"\n}\n\n/**\n * Creates a range from this [Double] value to the specified [that]
value.\n * \n * Numbers are compared with the ends of this range according to IEEE-754.\n * \n * @sample
samples.ranges.Ranges.rangeFromDouble\n * \n@SinceKotlin("1.1")\npublic operator fun Double.rangeTo(that:
Double): ClosedFloatingPointRange<Double> = ClosedDoubleRange(this, that)\n\n/**\n * An open-ended range of
values of type `Double`.\n * \n * Numbers are compared with the ends of this range according to IEEE-754.\n
*\n * \n@OptIn(ExperimentalStdlibApi::class)\nprivate class OpenEndDoubleRange(\n    start: Double,\n    endExclusive: Double\n    ) : OpenEndRange<Double> {\n    private val _start = start\n    private val _endExclusive =

```



```

throw IllegalArgumentException("Step must be positive, was: $step.")\n}\n", /*\n * Copyright 2010-2019
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Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("KClasses")\n\n@file:Suppress("UNCHECKED_CAST")\n\npackage
kotlin.reflect\n\nimport kotlin.internal.LowPriorityInOverloadResolution\n\n/**\n * Casts the given [value]
to the class represented by this [KClass] object.\n * Throws an exception if the value is `null` or if it is not an
instance of this class.\n * This is an experimental function that behaves as a similar function from
kotlin.reflect.full on JVM.\n * @see [KClass.isInstance]\n * @see [KClass.safeCast]\n
*/\n\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\n@LowPriorityInOverloadResoluti
on\n\nfun <T : Any> KClass<T>.cast(value: Any?): T {\n    if (!isInstance(value)) throw ClassCastException("Value
cannot be cast to $qualifiedOrSimpleName")\n    return value as T\n}\n\n// TODO: replace with qualifiedName
when it is fully supported in K/JS\n\ninternal expect val KClass<*>.qualifiedOrSimpleName: String?\n\n/**\n * Casts
the given [value] to the class represented by this [KClass] object.\n * Returns `null` if the value is `null` or if it is not
an instance of this class.\n * This is an experimental function that behaves as a similar function from
kotlin.reflect.full
on JVM.\n * @see [KClass.isInstance]\n * @see [KClass.cast]\n
*/\n\n@SinceKotlin("1.4")\n\n@WasExperimental(ExperimentalStdlibApi::class)\n\n@LowPriorityInOverloadResoluti
on\n\nfun <T : Any> KClass<T>.safeCast(value: Any?): T? {\n    return if (isInstance(value)) value as T else
null\n}\n", /*\n * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of
this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*/\n\npackage kotlin.reflect\n\nimport kotlin.jvm.JvmField\n\nimport kotlin.jvm.JvmStatic\n\n\n/**\n * Represents
a type projection. Type projection is usually the argument to another type in a type usage.\n * For example, in the
type `Array<out Number>`, `out Number` is the covariant projection of the type represented by the class
`Number`.\n * Type projection is either the star projection, or an entity consisting of a specific type plus optional
variance.\n * See the [Kotlin
language documentation](https://kotlinlang.org/docs/reference/generics.html#type-projections)\n * for more
information.\n * @SinceKotlin("1.1")\n\npublic data class KTypeProjection constructor(\n    /**\n     * The use-
site variance specified in the projection, or `null` if this is a star projection.\n     */\n    public val variance:
KVariance?,\n    /**\n     * The type specified in the projection, or `null` if this is a star projection.\n     */\n    public
val type: KType?) {\n    init {\n        require((variance == null) == (type == null)) {\n            if (variance ==
null)\n                "Star projection must have no type specified." \n            else\n                "The projection variance
$variance requires type to be specified." \n        }\n    }\n\n    override fun toString(): String = when (variance) {\n
null -> "*" \n    KVariance.INVARIANT -> type.toString() \n    KVariance.IN -> "in $type" \n
KVariance.OUT -> "out $type" \n    }\n\n    public companion object {\n        // provided for compiler access\n        @JvmField\n        @PublishedApi\n        internal val star: KTypeProjection = KTypeProjection(null, null)\n        /**\n         * Star projection, denoted by the
`*` character.\n         * For example, in the type `KClass<*>`, `*` is the star projection.\n         * See the [Kotlin
language documentation](https://kotlinlang.org/docs/reference/generics.html#star-projections)\n         * for more
information.\n         */\n        public val STAR: KTypeProjection get() = star\n        /**\n         * Creates an
invariant projection of a given type. Invariant projection is just the type itself,\n         * without any use-site variance
modifiers applied to it.\n         * For example, in the type `Set<String>`, `String` is an invariant projection of the type
represented by the class `String`.\n         */\n        @JvmStatic\n        public fun invariant(type: KType):
KTypeProjection =\n            KTypeProjection(KVariance.INVARIANT,
type)\n        /**\n         * Creates a contravariant projection of a given type, denoted by the `in` modifier applied to
a type.\n         * For example, in the type `MutableList<in Number>`, `in Number` is a contravariant projection of
the type of class `Number`.\n         */\n        @JvmStatic\n        public fun contravariant(type: KType):
KTypeProjection =\n            KTypeProjection(KVariance.IN, type)\n        /**\n         * Creates a covariant
projection of a given type, denoted by the `out` modifier applied to a type.\n         * For example, in the type

```

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`Array<out Number>`, `out Number` is a covariant projection of the type of class `Number`.
    */
@JvmStatic
    public fun covariant(type: KType): KTypeProjection =
KTypeProjection(KVariance.OUT, type)
}
"/
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*/
package kotlin.reflect
/**
 * Represents
variance applied to a type parameter on the declaration site (*declaration-site variance*),
or to a type in a
projection (*use-site variance*).
* See the [Kotlin language
documentation](https://kotlinlang.org/docs/reference/generics.html#variance)
for more information.
*
@see [KTypeParameter.variance]
* @see [KTypeProjection]
*/
@SinceKotlin("1.1")
enum class KVariance
{
    /**
     * The affected type parameter or type is *invariant*, which means it has no variance applied to it.
     */
    INVARIANT,
    /**
     * The affected type parameter or type is *contravariant*. Denoted by the `in`
modifier in the source code.
     */
    IN,
    /**
     * The affected type parameter or type is *covariant*.
Denoted by the `out` modifier in the source code.
     */
    OUT,
}
"/
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found in the license/LICENSE.txt file.
*/
package kotlin.reflect
/**
 * Returns a runtime representation of
the given reified type [T] as an instance of [KType].
* Note that on JVM, the created type has no annotations
([KType.annotations] returns an empty list)
even if the type in the source code is annotated. Support for type
annotations might be added in a future version.
*/
@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
public inline fun <reified T>
typeOf(): KType =
    throw UnsupportedOperationException("This function is implemented as an intrinsic on all
supported platforms.")
"/
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license/LICENSE.txt file.
*/
@file:kotlin.jvm.JvmMultifileClass
@file:kotlin.jvm.JvmName("StringsKt")
package
kotlin.text
/**
 * An object to which char sequences and values can be appended.
*/
expect interface
Appendable {
    /**
     * Appends the specified character [value] to this Appendable and returns this instance.
     */
    * @param value the character to append.
    fun append(value: Char): Appendable
    /**
     * Appends the specified character sequence [value] to this Appendable and returns this instance.
     */
    * @param value the character sequence to append. If [value] is `null`, then the four characters `null` are appended to this
Appendable.
     */
    fun append(value: CharSequence?): Appendable
    /**
     * Appends a subsequence of
the specified character sequence [value] to this Appendable and returns this instance.
     */
    * @param value the
character sequence from which a subsequence is appended. If [value] is `null`,
then characters are appended
as
if [value] contained the four characters `null`.
     */
    * @param startIndex the beginning (inclusive) of the
subsequence to append.
     */
    * @param endIndex the end (exclusive) of the subsequence to append.
     */
    * @throws IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of
range of the [value] character sequence indices or when `startIndex > endIndex`.
     */
    fun append(value:
CharSequence?, startIndex: Int, endIndex: Int): Appendable
}
/**
 * Appends a subsequence of the specified
character sequence [value] to this Appendable and returns this instance.
     */
    * @param value the character
sequence from which a subsequence is appended.
     */
    * @param startIndex the beginning (inclusive) of the
subsequence to append.
     */
    * @param endIndex the end (exclusive) of the subsequence to append.
     */
    * @throws
IndexOutOfBoundsException or [IllegalArgumentException] when [startIndex] or [endIndex] is out of range of the
[value] character
sequence indices or when `startIndex > endIndex`.
*/
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
public fun <T : Appendable>
T.appendRange(value: CharSequence, startIndex: Int, endIndex: Int): T {
    @Suppress("UNCHECKED_CAST")
    return append(value, startIndex, endIndex) as T
}
/**
 * Appends

```

all arguments to the given [Appendable].\n */\npublic fun <T : Appendable> T.append(vararg value: CharSequence?): T {\n for (item in value)\n append(item)\n return this}\n\n/** Appends a line feed character (`\n`) to this Appendable. */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(): Appendable = append("\n")\n\n/** Appends value to the given Appendable and a line feed character (`\n`) after it. */\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(value: CharSequence?): Appendable = append(value).appendLine()\n\n/** Appends value to the given

Appendable and a line feed character (`\n`) after it.

```
*/\n@SinceKotlin("1.4")\n@kotlin.internal.InlineOnly\npublic inline fun Appendable.appendLine(value: Char): Appendable = append(value).appendLine()\n\ninternal fun <T> Appendable.appendElement(element: T, transform: ((T) -> CharSequence)?) {\n when {\n transform != null -> append(transform(element))\n element is CharSequence? -> append(element)\n element is Char -> append(element)\n else -> append(element.toString())\n }\n}\n\n"/\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
```

```
*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("StringsKt")\n\npackage kotlin.text\n\n/**\n * Trims leading whitespace characters followed by [marginPrefix] from every line of a source string and removes\n * the first and the last lines if they are blank (notice difference blank vs empty).\n * *\n * Doesn't affect a line if it doesn't contain [marginPrefix] except the first and the last blank lines.\n * *\n * Doesn't preserve the original line endings.\n * *\n * @param marginPrefix non-blank string, which is used as a margin delimiter. Default is `|` (pipe character).\n * *\n * @sample samples.text.Strings.trimMargin\n * @see trimIndent\n * @see kotlin.text.isWhitespace\n */\n@kotlin.internal.IntrinsicConstEvaluation\npublic fun String.trimMargin(marginPrefix: String = "|"): String =\n replaceIndentByMargin("|", marginPrefix)\n\n/**\n * Detects indent by [marginPrefix] as it does [trimMargin] and replace it with [newIndent].\n * *\n * @param marginPrefix non-blank string, which is used as a margin delimiter. Default is `|` (pipe character).\n */\npublic fun String.replaceIndentByMargin(newIndent: String = "\n", marginPrefix: String = "|"): String {\n require(marginPrefix.isNotBlank()) { "marginPrefix must be non-blank string." }\n
```

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\n val lines = lines()\n return lines.reindent(length + newIndent.length * lines.size, getIndentFunction(newIndent), { line ->\n val firstNonWhitespaceIndex = line.indexOfFirst { !it.isWhitespace() }\n\n when {\n firstNonWhitespaceIndex == -1 -> null\n line.startsWith(marginPrefix, firstNonWhitespaceIndex) -> line.substring(firstNonWhitespaceIndex + marginPrefix.length)\n else -> null\n }\n })\n}\n\n/**\n * Detects a common minimal indent of all the input lines, removes it from every line and also removes the first and the last\n * lines if they are blank (notice difference blank vs empty).\n * *\n * Note that blank lines do not affect the detected indent level.\n * *\n * In case if there are non-blank lines with no leading whitespace characters (no indent at all) then the\n * common indent is 0, and therefore this function doesn't change the indentation.\n * *\n * Doesn't preserve the original line endings.\n * *\n * @sample samples.text.Strings.trimIndent\n * @see trimMargin\n * @see kotlin.text.isBlank\n */\n@kotlin.internal.IntrinsicConstEvaluation\npublic fun String.trimIndent(): String = replaceIndent("\n")\n\n/**\n * Detects a common minimal indent like it does [trimIndent] and replaces it with the specified [newIndent].\n */\npublic fun String.replaceIndent(newIndent: String = "\n"): String {\n val lines = lines()\n val minCommonIndent = lines\n .filter(String::isNotBlank)\n .map(String::indentWidth)\n .minOrNull() ?: 0\n return lines.reindent(length + newIndent.length * lines.size, getIndentFunction(newIndent), { line ->\n line.drop(minCommonIndent) })\n}\n\n/**\n * Prepends [indent] to every line of the original string.\n * *\n * Doesn't preserve the original line endings.\n */\npublic fun String.prependIndent(indent: String = "\n "): String =\n lineSequence()\n .map {\n when {\n it.isBlank() -> {\n when {\n it.length < indent.length -> indent\n else -> it\n }\n }\n else -> indent + it\n }\n }\n .joinToString("\n")\n\nprivate fun String.indentWidth(): Int =
```

```

indexOfFirst { !it.isWhitespace() }.let { if (it == -1) length else it } \n\nprivate fun getIndentFunction(indent: String)
= when { \n  indent.isEmpty() -> { line: String -> line } \n  else -> { line: String -> indent + line } \n } \n\nprivate
inline fun List<String>.reindent(\n  resultSizeEstimate: Int, \n  indentAddFunction: (String) -> String, \n
indentCutFunction: (String) -> String? \n): String { \n  val lastIndex = lastIndex \n  return mapIndexedNotNull {
index, value -> \n    if ((index == 0 || index == lastIndex) && value.isBlank()) \n      null \n    else \n
indentCutFunction(value)?.let(indentAddFunction)?: value \n  } \n  .joinTo(StringBuilder(resultSizeEstimate),
"\n\n") \n

```

```

.toString() \n } \n", /* \n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language
contributors. \n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file. \n */ \n \n package kotlin.text \n \n /** \n * Defines names for Unicode symbols used in proper
Typography. \n */ \n public object Typography { \n  /** The character &#x22; \u2013 quotation mark */ \n  public
const val quote: Char = "\u0022" \n  /** The character &#x24; \u2013 dollar sign */ \n  public const val dollar:
Char = "\u0024" \n  /** The character &#x26; \u2013 ampersand */ \n  public const val amp: Char = "\u0026" \n
/** The character &#x3C; \u2013 less-than sign */ \n  public const val less: Char = "\u003C" \n  /** The character
&#x3E; \u2013 greater-than sign */ \n  public const val greater: Char = "\u003E" \n  /** The non-breaking space
character */ \n  public const val nbsp: Char = "\u00A0" \n  /** The character &#xD7; */ \n  public
const val times: Char = "\u00D7" \n  /** The character &#xA2; */ \n  public const val cent: Char = "\u00A2" \n
/** The character &#xA3; */ \n  public const val pound: Char = "\u00A3" \n  /** The character &#xA7; */ \n
public const val section: Char = "\u00A7" \n  /** The character &#xA9; */ \n  public const val copyright: Char =
"\u00A9" \n  /** The character &#xAB; */ \n  @SinceKotlin("1.6") \n  public const val leftGuillemet: Char =
"\u00AB" \n  /** The character &#xBB; */ \n  @SinceKotlin("1.6") \n  public const val rightGuillemet: Char =
"\u00BB" \n  /** The character &#xAE; */ \n  public const val registered: Char = "\u00AE" \n  /** The character
&#xB0; */ \n  public const val degree: Char = "\u00B0" \n  /** The character &#xB1; */ \n  public const val
plusMinus: Char = "\u00B1" \n  /** The character &#xB6; */ \n  public const val paragraph: Char = "\u00B6" \n
/** The character &#xB7; */ \n  public const val middleDot: Char = "\u00B7" \n
  /** The character &#xBD; */ \n  public const val half: Char = "\u00BD" \n  /** The character &#x2013; */ \n
public const val ndash: Char = "\u2013" \n  /** The character &#x2014; */ \n  public const val mdash: Char =
"\u2014" \n  /** The character &#x2018; */ \n  public const val leftSingleQuote: Char = "\u2018" \n  /** The
character &#x2019; */ \n  public const val rightSingleQuote: Char = "\u2019" \n  /** The character &#x201A; */ \n
public const val lowSingleQuote: Char = "\u201A" \n  /** The character &#x201C; */ \n  public const val
leftDoubleQuote: Char = "\u201C" \n  /** The character &#x201D; */ \n  public const val rightDoubleQuote: Char
= "\u201D" \n  /** The character &#x201E; */ \n  public const val lowDoubleQuote: Char = "\u201E" \n  /** The
character &#x2020; */ \n  public const val dagger: Char = "\u2020" \n  /** The character &#x2021; */ \n  public
const val doubleDagger: Char = "\u2021" \n  /** The character &#x2022; */ \n  public
const val bullet: Char = "\u2022" \n  /** The character &#x2026; */ \n  public const val ellipsis: Char = "\u2026" \n
/** The character &#x2032; */ \n  public const val prime: Char = "\u2032" \n  /** The character &#x2033; */ \n
public const val doublePrime: Char = "\u2033" \n  /** The character &#x20AC; */ \n  public const val euro: Char =
"\u20AC" \n  /** The character &#x2122; */ \n  public const val tm: Char = "\u2122" \n  /** The character
&#x2248; */ \n  public const val almostEqual: Char = "\u2248" \n  /** The character &#x2260; */ \n  public const
val notEqual: Char = "\u2260" \n  /** The character &#x2264; */ \n  public const val lessOrEqual: Char =
"\u2264" \n  /** The character &#x2265; */ \n  public const val greaterOrEqual: Char = "\u2265" \n \n  /** The
character &#xAB; */ \n  @Deprecated("This constant has a typo in the name. Use leftGuillemet instead.",
ReplaceWith("Typography.leftGuillemet")) \n  @DeprecatedSinceKotlin("1.6") \n
public const val leftGuillemete: Char = "\u00AB" \n \n  /** The character &#xBB; */ \n  @Deprecated("This
constant has a typo in the name. Use rightGuillemet instead.", ReplaceWith("Typography.rightGuillemet")) \n
  @DeprecatedSinceKotlin("1.6") \n  public const val rightGuillemete: Char = "\u00BB" \n } \n", /* \n * Copyright
2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors. \n * Use of this source code is governed
by the Apache 2.0 license that can be found in the license/LICENSE.txt file. \n */ \n \n package kotlin.text \n \n /** \n *

```

Represents a collection of captured groups in a single match of a regular expression.

```

    * This collection has size of `groupCount + 1` where `groupCount` is the count of groups in the regular expression.
    * Groups are indexed from 1 to `groupCount` and group with the index 0 corresponds to the entire match.
    * An element of the collection at the particular index can be `null` if the corresponding group in the regular expression is optional and there was no match captured by that group.

```

```

public interface MatchGroupCollection : Collection<MatchGroup?> {
    /** Returns a group with the specified [index].
     * @return An instance of [MatchGroup] if the group with the specified [index] was matched or `null` otherwise.
     * Groups are indexed from 1 to the count of groups in the regular expression. A group with the index 0 corresponds to the entire match.
     */
    public operator fun get(index: Int): MatchGroup?

    /** Extends [MatchGroupCollection] by introducing a way to get matched groups by name, when regex supports it.
     * @since Kotlin("1.1")
     */
    public interface MatchNamedGroupCollection : MatchGroupCollection {
        /** Returns a named group with the specified [name].
         * @return An instance of [MatchGroup] if the group with the specified [name] was matched or `null` otherwise.
         * @throws IllegalArgumentException if there is no group with the specified [name] defined in the regex pattern.
         * @throws UnsupportedOperationException if this match group collection doesn't support getting match groups by name, for example, when it's not supported by the current platform.
         */
        public operator fun get(name: String): MatchGroup?
    }
}

```

Represents the results from a single regular expression match.

```

public interface MatchResult {
    /** The range of indices in the original string where match was captured.
     */
    public val range: IntRange

    /** The substring from the input string captured by this match.
     */
    public val value: String

    /** A collection of groups matched by the regular expression.
     * This collection has size of `groupCount + 1` where `groupCount` is the count of groups in the regular expression.
     * Groups are indexed from 1 to `groupCount` and group with the index 0 corresponds to the entire match.
     */
    public val groups: MatchGroupCollection

    /** A list of matched indexed group values.
     * This list has size of `groupCount + 1` where `groupCount` is the count of groups in the regular expression.
     * Groups are indexed from 1 to `groupCount` and group with the index 0 corresponds to the entire match.
     * If the group in the regular expression is optional and there were no match captured by that group, corresponding item in [groupValues] is an empty string.
     */
    @sample
    samples.text.Regexps.matchDestructuringToGroupValues
    public val groupValues: List<String>

    /** An instance of [MatchResult.Destructured] wrapper providing components for destructuring assignment of group values.
     * component1 corresponds to the value of the first group, component2 of the second, and so on.
     * @sample samples.text.Regexps.matchDestructuringToGroupValues
     */
    public val destructured: Destructured

    /** Returns a new [MatchResult] with the results for the next match, starting at the position at which the last match ended (at the character after the last matched character).
     */
    public fun next(): MatchResult?

    /** Provides components for destructuring assignment of group values.
     * [component1] corresponds to the value of the first group, [component2] of the second, and so on.
     * If the group in the regular expression is optional and there were no match captured by that group, corresponding component value is an empty string.
     */
    @sample
    samples.text.Regexps.matchDestructuringToGroupValues
    public class Destructured internal constructor(public val match: MatchResult) {
        @kotlin.internal.InlineOnly
        public operator inline fun component1(): String = match.groupValues[1]
        @kotlin.internal.InlineOnly
        public operator inline fun component2(): String = match.groupValues[2]
        @kotlin.internal.InlineOnly
        public operator inline fun component3(): String = match.groupValues[3]
        @kotlin.internal.InlineOnly
        public operator inline fun component4(): String = match.groupValues[4]
        @kotlin.internal.InlineOnly
        public operator inline fun component5(): String = match.groupValues[5]
        @kotlin.internal.InlineOnly
        public operator inline fun component6(): String = match.groupValues[6]
        @kotlin.internal.InlineOnly
        public operator inline fun component7(): String = match.groupValues[7]
        @kotlin.internal.InlineOnly
        public operator inline fun component8(): String = match.groupValues[8]
    }
}

```

```

fun component9(): String = match.groupValues[9]\n    @kotlin.internal.InlineOnly\n    public operator inline
fun component10(): String = match.groupValues[10]\n\n
    /**\n     * Returns destructured group values as a list of strings.\n     * First value in the returned list
corresponds to the value of the first group, and so on.\n     *\n     * @sample
samples.text.Regexp.matchDestructuringToGroupValues\n     */\n    public fun toList(): List<String> =
match.groupValues.subList(1, match.groupValues.size)\n    }\n}", "/*\n * Copyright 2010-2021 JetBrains s.r.o. and
Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmMultifileClass()\n@file:kotlin.jvm.JvmName("DurationUnitKt")\n\npackage
kotlin.time\n\n/**\n * The list of possible time measurement units, in which a duration can be expressed.\n * \n *
The smallest time unit is [NANOSECONDS] and the largest is [DAYS], which corresponds to exactly 24
[HOURS].\n * \n * @SinceKotlin("1.6")\n * @WasExperimental(ExperimentalTime::class)\n * public
expect enum class DurationUnit {\n     /**\n     * Time unit representing one nanosecond, which is 1/1000 of a
microsecond.\n     */\n     NANOSECONDS,\n     /**\n     * Time unit representing one microsecond, which is 1/1000
of a millisecond.\n     */\n     MICROSECONDS,\n     /**\n     * Time unit representing one millisecond, which is
1/1000 of a second.\n     */\n     MILLISECONDS,\n     /**\n     * Time unit representing one second.\n     */\n
SECONDS,\n     /**\n     * Time unit representing one minute.\n     */\n     MINUTES,\n     /**\n     * Time unit
representing one hour.\n     */\n     HOURS,\n     /**\n     * Time unit representing one day, which is always equal to
24 hours.\n     */\n     DAYS;\n }\n\n/**\n * Converts the given time duration [value] expressed in the specified
[sourceUnit] into the specified [targetUnit].\n * \n * @SinceKotlin("1.3")\n * internal expect fun
convertDurationUnit(value: Double, sourceUnit: DurationUnit, targetUnit: DurationUnit): Double\n\n// overflown
result
is unspecified\n * \n * @SinceKotlin("1.5")\n * internal expect fun convertDurationUnitOverflow(value: Long, sourceUnit:
DurationUnit, targetUnit: DurationUnit): Long\n\n// overflown result is coerced in the Long range
boundaries\n * \n * @SinceKotlin("1.5")\n * internal expect fun convertDurationUnit(value: Long, sourceUnit:
DurationUnit, targetUnit: DurationUnit):
Long\n\n\n * \n * @SinceKotlin("1.3")\n * @Suppress("REDUNDANT_ELSE_IN_WHEN")\n * internal fun
DurationUnit.shortName(): String = when (this) {\n     DurationUnit.NANOSECONDS -> "ns"\n     DurationUnit.MICROSECONDS -> "us"\n     DurationUnit.MILLISECONDS -> "ms"\n     DurationUnit.SECONDS -> "s"\n     DurationUnit.MINUTES -> "m"\n     DurationUnit.HOURS -> "h"\n     DurationUnit.DAYS -> "d"\n     else -> error("Unknown unit: $this")\n }\n\n * \n * @SinceKotlin("1.5")\n * internal fun
durationUnitByShortName(shortName: String): DurationUnit = when (shortName) {\n     "ns" ->
DurationUnit.NANOSECONDS\n     "us" -> DurationUnit.MICROSECONDS\n     "ms" -> DurationUnit.MILLISECONDS\n     "s" -> DurationUnit.SECONDS\n     "m" -> DurationUnit.MINUTES\n     "h" -> DurationUnit.HOURS\n     "d" -> DurationUnit.DAYS\n     else -> throw
IllegalArgumentException("Unknown duration unit short name:
$shortName")\n }\n\n * \n * @SinceKotlin("1.5")\n * internal fun durationUnitByIsoChar(isoChar: Char,
isTimeComponent: Boolean): DurationUnit =\n     when {\n         !isTimeComponent -> {\n             when (isoChar) {\n                 'D' -> DurationUnit.DAYS\n                 else -> throw IllegalArgumentException("Invalid or
unsupported duration ISO non-time unit: $isoChar")\n             }\n         }\n         else -> {\n             when (isoChar) {\n                 'H' -> DurationUnit.HOURS\n                 'M' -> DurationUnit.MINUTES\n                 'S' ->
DurationUnit.SECONDS\n                 else -> throw IllegalArgumentException("Invalid duration ISO time unit:
$isoChar")\n             }\n         }\n     }\n }", "/*\n * Copyright 2010-2019 JetBrains s.r.o.
and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license
that can be found in the license/LICENSE.txt file.\n * \n * \n * package kotlin.time\n * \n * import
kotlin.annotation.AnnotationTarget.\n * \n * \n * \n * This annotation marks the experimental preview of the standard
library API for measuring time and working with durations.\n * \n * \n * > Note that this API is in a preview state and has
a very high chance of being changed in the future.\n * \n * Do not use it if you develop a library since your library will

```

become binary incompatible with the future versions of the standard library. Any usage of a declaration annotated with `@ExperimentalTime` must be accepted either by annotating that usage with the `[OptIn]` annotation, e.g. `@OptIn(ExperimentalTime::class)` or by using the compiler argument `-opt-in=kotlin.time.ExperimentalTime`.

`@RequiresOptIn(level = RequiresOptIn.Level.ERROR)`
`@MustBeDocumented`
`@Retention(AnnotationRetention.BINARY)`
`@Target(Class, ANNOTATION_CLASS, PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION, PROPERTY_GETTER, PROPERTY_SETTER, TYPEALIAS)`
`@SinceKotlin("1.3")`
public annotation class ExperimentalTime {
 /** Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors. Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file. */
 package kotlin.time
 import kotlin.jvm.JvmInline
 /** A source of time for measuring time intervals. The only operation provided by the time source is `[markNow]`. It returns a `[TimeMark]`, which can be used to query the elapsed time later. @see `[measureTime]` @see `[measureTimedValue]`
 @SinceKotlin("1.3")
 @ExperimentalTime
 public interface TimeSource {
 /** Marks a point in time on this time source. The returned `[TimeMark]` instance encapsulates the captured time point and allows querying the duration of time interval `[elapsed]` `[TimeMark.elapsedNow]` from that point.
 public fun markNow(): TimeMark
 /** A `[TimeSource]` that returns `[time marks]` `[ComparableTimeMark]` that can be compared for difference with each other.
 @SinceKotlin("1.8")
 @ExperimentalTime
 public interface WithComparableMarks : TimeSource {
 override fun markNow(): ComparableTimeMark
 }
 /** The most precise time source available in the platform. This time source returns its readings from a source of monotonic time when it is available in a target platform, and resorts to a non-monotonic time source otherwise. The function `[markNow]` of this time source returns the specialized `[ValueTimeMark]` that is an inline value class wrapping a platform-dependent time reading value.
 public object Monotonic : TimeSource.WithComparableMarks {
 override fun markNow(): ValueTimeMark = MonotonicTimeSource.markNow()
 override fun toString(): String = MonotonicTimeSource.toString()
 /** A specialized `[kotlin.time.TimeMark]` returned by `[TimeSource.Monotonic]` time source. This time mark is implemented as an inline value class wrapping a platform-dependent time reading value of the default monotonic time source, thus allowing to avoid additional boxing of that value. The operations `[plus]` and `[minus]` are also specialized to return `[ValueTimeMark]` type. This time mark implements `[ComparableTimeMark]` and therefore is comparable with other time marks obtained from the same `[TimeSource.Monotonic]` time source.
 @ExperimentalTime
 @SinceKotlin("1.7")
 @JvmInline
 public value class ValueTimeMark internal constructor(internal val reading: ValueTimeMarkReading) : ComparableTimeMark {
 override fun elapsedNow(): Duration = MonotonicTimeSource.elapsedFrom(this)
 override fun plus(duration: Duration): ValueTimeMark = MonotonicTimeSource.adjustReading(this, duration)
 override fun minus(duration: Duration): ValueTimeMark = MonotonicTimeSource.adjustReading(this, -duration)
 override fun hasPassedNow(): Boolean = !elapsedNow().isNegative()
 override fun hasNotPassedNow(): Boolean = elapsedNow().isNegative()
 override fun minus(other: ComparableTimeMark): Duration {
 if (other !is ValueTimeMark) throw IllegalArgumentException("Subtracting or comparing time marks from different time sources is not possible: \$this and \$other")
 return this.minus(other)
 }
 /** Returns the duration elapsed between the `[other]` time mark obtained from the same `[TimeSource.Monotonic]` time source and `this` time mark. The returned duration can be infinite if the time marks are far away from each other and the result doesn't fit into `[Duration]` type, or if one time mark is infinitely distant, or if both `this` and `[other]` time marks lie infinitely distant on the opposite sides of the time scale. Two infinitely distant time marks on the same side of the time scale are considered equal and the duration between them is `[Duration.ZERO]`.
 }
 }
 }
}

```

    public operator fun minus(other: ValueTimeMark): Duration = MonotonicTimeSource.differenceBetween(this,
other)\n\n    /**\n    * Compares this time mark with the [other] time mark for order.\n    *\n    * - Returns zero if this time mark represents *the same moment* of time as the [other] time mark.\n    * -
Returns
    a negative number if this time mark is *earlier* than the [other] time mark.\n    * - Returns a positive number
if this time mark is *later* than the [other] time mark.\n    */\n    public operator fun compareTo(other:
ValueTimeMark): Int =\n        (this - other).compareTo(Duration.ZERO)\n    }\n    }\n\n    public companion
object {\n\n        }\n    }\n\n    /** A platform-specific reading type that is wrapped by
[TimeSource.Monotonic.ValueTimeMark] inline class. */\n\n    internal expect class ValueTimeMarkReading\n\n    /**\n    * Represents a time point notched on a particular [TimeSource]. Remains bound to the time source it was taken
from\n    * and allows querying for the duration of time elapsed from that point (see the function [elapsedNow]).\n    */\n\n    @SinceKotlin("1.3")\n    @ExperimentalTime\n    public interface TimeMark {\n\n        /**\n        * Returns the amount of
time passed from this mark measured with the time source from which this mark was taken.\n        *\n        * Note
that the value returned by this function can change on subsequent invocations.\n        */\n        @throws
IllegalArgumentExcpion an implementation may throw if calculating the elapsed time involves\n        * adding a
positive infinite duration to an infinitely distant past time mark or\n        * a negative infinite duration to an infinitely
distant future time mark.\n        */\n        public abstract fun elapsedNow(): Duration\n\n        /**\n        * Returns a time mark
on the same time source that is ahead of this time mark by the specified [duration].\n        *\n        * The returned time
mark is more _late_ when the [duration] is positive, and more _early_ when the [duration] is negative.\n        *\n        *
If the time mark is adjusted too far in the past or in the future, it may saturate to an infinitely distant time mark.\n        *
In that case, [elapsedNow] will return an infinite duration elapsed from such infinitely distant mark.\n        *\n        *
@throws IllegalArgumentExcpion an implementation may
        throw if a positive infinite duration is added to an infinitely distant past time mark or\n        * a negative infinite
duration is added to an infinitely distant future time mark.\n        */\n        public operator fun plus(duration: Duration):
TimeMark = AdjustedTimeMark(this, duration)\n\n        /**\n        * Returns a time mark on the same time source that is
behind this time mark by the specified [duration].\n        *\n        * The returned time mark is more _early_ when the
[duration] is positive, and more _late_ when the [duration] is negative.\n        *\n        * If the time mark is adjusted too
far in the past or in the future, it may saturate to an infinitely distant time mark.\n        * In that case, [elapsedNow]
will return an infinite duration elapsed from such infinitely distant mark.\n        *\n        * @throws
IllegalArgumentExcpion an implementation may throw if a positive infinite duration is subtracted from an
infinitely distant future time mark or\n        * a negative infinite duration is subtracted
from an infinitely distant past time mark.\n        */\n        public open operator fun minus(duration: Duration): TimeMark
= plus(-duration)\n\n        /**\n        * Returns true if this time mark has passed according to the time source from
which this mark was taken.\n        *\n        * Note that the value returned by this function can change on subsequent
invocations.\n        * If the time source is monotonic, it can change only from `false` to `true`, namely, when the time
mark becomes behind the current point of the time source.\n        */\n        public fun hasPassedNow(): Boolean =
!elapsedNow().isNegative()\n\n        /**\n        * Returns false if this time mark has not passed according to the time
source from which this mark was taken.\n        *\n        * Note that the value returned by this function can change on
subsequent invocations.\n        * If the time source is monotonic, it can change only from `true` to `false`, namely,
when the time mark becomes behind the current point of the time source.\n        */\n\n        */\n        public fun hasNotPassedNow(): Boolean = elapsedNow().isNegative()\n    }\n\n    /** A [TimeMark] that
can be compared for difference with other time marks obtained from the same [TimeSource.WithComparableMarks]
time source.\n    */\n\n    @SinceKotlin("1.8")\n    @ExperimentalTime\n    public interface ComparableTimeMark :
TimeMark, Comparable<ComparableTimeMark> {\n\n        public abstract override operator fun plus(duration:
Duration): ComparableTimeMark\n        public open override operator fun minus(duration: Duration):
ComparableTimeMark = plus(-duration)\n\n        /**\n        * Returns the duration elapsed between the [other] time mark
and `this` time mark.\n        *\n        * The returned duration can be infinite if the time marks are far away from each
other and\n        * the result doesn't fit into [Duration] type,\n        * or if one time mark is infinitely distant, or if both

```



```

`this` and [other] time marks
 * lie infinitely distant on the opposite sides of the time scale.
 *
 * Two
infinitely
distant time marks on the same side of the time scale are considered equal and
 * the duration between them is
[Duration.ZERO].
 *
 * Note that the other time mark must be obtained from the same time source as this
one.
 *
 * @throws IllegalArgumentException if time marks were obtained from different time sources.
 *
 * public operator fun minus(other: ComparableTimeMark): Duration
 *
 * Compares this time mark
with the [other] time mark for order.
 *
 * - Returns zero if this time mark represents *the same moment* of
time as the [other] time mark.
 *
 * - Returns a negative number if this time mark is *earlier* than the [other] time
mark.
 *
 * - Returns a positive number if this time mark is *later* than the [other] time
mark.
 *
 * Note
that the other time mark must be obtained from the same time source as this one.
 *
 * @throws
IllegalArgumentException if time marks were obtained from different
time sources.
 *
 * public override operator fun compareTo(other: ComparableTimeMark): Int =
 * (this -
other).compareTo(Duration.ZERO)
 *
 * Returns `true` if two time marks from the same time source
represent the same moment of time, and `false` otherwise,
 * including the situation when the time marks were
obtained from different time sources.
 *
 * override fun equals(other: Any?): Boolean
 *
 * override fun
hashCode(): Int
 *
 * @ExperimentalTime
private class AdjustedTimeMark(val mark: TimeMark, val
adjustment: Duration) : TimeMark {
 *
 * override fun elapsedNow(): Duration = mark.elapsedNow() -
adjustment
 *
 * override fun plus(duration: Duration): TimeMark = AdjustedTimeMark(mark, adjustment +
duration)
 *
 * }
 *
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 *
 * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.
 *
 * package kotlin.time
 *
 * import
kotlin.time.Duration.Companion.milliseconds
 *
 * import
kotlin.time.Duration.Companion.nanoseconds
 *
 * import
kotlin.time.Duration.Companion.seconds
 *
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * internal expect object
MonotonicTimeSource : TimeSource.WithComparableMarks {
 *
 * override fun markNow():
TimeSource.Monotonic.ValueTimeMark
 *
 * fun elapsedFrom(timeMark:
TimeSource.Monotonic.ValueTimeMark): Duration
 *
 * fun differenceBetween(one:
TimeSource.Monotonic.ValueTimeMark, another: TimeSource.Monotonic.ValueTimeMark): Duration
 *
 * fun
adjustReading(timeMark: TimeSource.Monotonic.ValueTimeMark, duration: Duration):
TimeSource.Monotonic.ValueTimeMark
 *
 * }
 *
 * An abstract class used to implement time sources that return
their readings as [Long] values in the specified [unit].
 *
 * @property unit The unit in which this time source's
readings are expressed.
 *
 * @SinceKotlin("1.3")
 * @ExperimentalTime
 * public abstract class
AbstractLongTimeSource(protected val unit:
DurationUnit) : TimeSource.WithComparableMarks {
 *
 * This protected method should be overridden to
return the current reading of the time source expressed as a [Long] number
 * in the unit specified by the [unit]
property.
 *
 * protected abstract fun read(): Long
 *
 * private class LongTimeMark(private val startedAt:
Long, private val timeSource: AbstractLongTimeSource, private val offset: Duration) : ComparableTimeMark {
 *
 * override fun elapsedNow(): Duration = if (offset.isInfinite()) -offset else (timeSource.read() -
startedAt).toDuration(timeSource.unit) - offset
 *
 * override fun plus(duration: Duration): ComparableTimeMark
= LongTimeMark(startedAt, timeSource, offset + duration)
 *
 * override fun minus(other:
ComparableTimeMark): Duration {
 *
 * if (other !is LongTimeMark || this.timeSource != other.timeSource)
 *
 * throw IllegalArgumentException("Subtracting or comparing time marks from different time sources is
not possible: $this and $other")
 *
 * val thisValue = this.effectiveDuration()
 *
 * val otherValue =
other.effectiveDuration()
 *
 * if (thisValue == otherValue && thisValue.isInfinite()) return
Duration.ZERO
 *
 * return thisValue - otherValue
 *
 * if (this.offset == other.offset &&
this.offset.isInfinite()) return Duration.ZERO
 *
 * val offsetDiff = this.offset - other.offset
 *
 * val
startedAtDiff = (this.startedAt - other.startedAt).toDuration(timeSource.unit)
 *
 * println("$startedAtDiff,
$offsetDiff")
 *
 * return if (startedAtDiff == -offsetDiff) Duration.ZERO else startedAtDiff + offsetDiff
 *
 * }
 *
 * override fun equals(other: Any?): Boolean =
 *
 * other is LongTimeMark && this.timeSource ==

```



```

duration.toLong(unit)\n
    reading = if (longDelta != Long.MIN_VALUE && longDelta != Long.MAX_VALUE) {\n        // when delta
fits in long, add it as long\n        val newReading = reading + longDelta\n        if (reading xor longDelta >= 0
&& reading xor newReading < 0) overflow(duration)\n        newReading\n    } else {\n        val delta =
duration.toDouble(unit)\n        // when delta is greater than long, add it as double\n        val newReading =
reading + delta\n        if (newReading > Long.MAX_VALUE || newReading < Long.MIN_VALUE)
overflow(duration)\n        newReading.toLong()\n    }\n\n    private fun overflow(duration: Duration) {\n
    throw IllegalStateException("TestTimeSource will overflow if its reading ${reading}${unit.shortName()} is
advanced by $duration.")\n    }\n\n    /*\n    * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming
Language contributors.\n    * Use of this source code is governed by the Apache 2.0 license that
can be found in the license/LICENSE.txt file.\n    */\n\n    package kotlin.time\n\n    import
kotlin.time.Duration.Companion.milliseconds\n    import kotlin.time.Duration.Companion.nanoseconds\n\n    // Long
time reading saturation math, shared between JVM and Native\n\n    internal fun saturatingAdd(longNs: Long,
duration: Duration): Long {\n    val durationNs = duration.inWholeNanoseconds\n    if (longNs.isSaturated()) { //
MIN_VALUE or MAX_VALUE - the reading is infinite\n        return checkInfiniteSumDefined(longNs, duration,
durationNs)\n    }\n    if (durationNs.isSaturated()) { // duration doesn't fit in Long nanos\n        return
saturatingAddInHalves(longNs, duration)\n    }\n    val result = longNs + durationNs\n    if (((longNs xor result)
and (durationNs xor result)) < 0) {\n        return if (longNs < 0) Long.MIN_VALUE else Long.MAX_VALUE\n    }\n
    return result\n    }\n\n    private fun checkInfiniteSumDefined(longNs: Long, duration: Duration, durationNs:
Long): Long {\n    if (duration.isInfinite()
&& (longNs xor durationNs < 0)) throw IllegalArgumentException("Summing infinities of different signs")\n
    return longNs\n    }\n\n    private fun saturatingAddInHalves(longNs: Long, duration: Duration): Long {\n    val half =
duration / 2\n    if (half.inWholeNanoseconds.isSaturated()) {\n        // this will definitely saturate\n        return
(longNs + duration.toDouble(DurationUnit.NANOS).toLong())\n    } else {\n        return
saturatingAdd(saturatingAdd(longNs, half), duration - half)\n    }\n\n    internal fun saturatingDiff(valueNs: Long,
originNs: Long): Duration {\n    if (originNs.isSaturated()) { // MIN_VALUE or MAX_VALUE\n        return -
(originNs.toDuration(DurationUnit.DAYS)) // saturate to infinity\n    }\n    return saturatingFiniteDiff(valueNs,
originNs)\n    }\n\n    internal fun saturatingOriginsDiff(origin1Ns: Long, origin2Ns: Long): Duration {\n    if
(origin2Ns.isSaturated()) { // MIN_VALUE or MAX_VALUE\n        if (origin1Ns == origin2Ns) return
Duration.ZERO //
saturated values of the same sign are considered equal\n        return -(origin2Ns.toDuration(DurationUnit.DAYS)) //
saturate to infinity\n    }\n    if (origin1Ns.isSaturated()) {\n        return origin1Ns.toDuration(DurationUnit.DAYS)\n
    }\n    return saturatingFiniteDiff(origin1Ns, origin2Ns)\n    }\n\n    private fun saturatingFiniteDiff(value1Ns: Long,
value2Ns: Long): Duration {\n    val result = value1Ns - value2Ns\n    if ((result xor value1Ns) and (result xor
value2Ns).inv() < 0) {\n        val resultMs = value1Ns / NANOS_IN_MILLIS - value2Ns / NANOS_IN_MILLIS\n
        val resultNs = value1Ns % NANOS_IN_MILLIS - value2Ns % NANOS_IN_MILLIS\n        return
resultMs.milliseconds + resultNs.nanoseconds\n    }\n    return
result.nanoseconds\n    }\n\n    @Suppress("NOTHING_TO_INLINE")\n    private inline fun Long.isSaturated(): Boolean
= (this - 1) or 1 == Long.MAX_VALUE // == either MAX_VALUE or MIN_VALUE\n    /*\n    * Copyright
2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n    *\n    * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n    */\n\n    package kotlin.time\n\n    import kotlin.contracts.*\n\n    /**\n    * Executes the given function [block] and returns the
duration of elapsed time interval.\n    * \n    * The elapsed time is measured with [TimeSource.Monotonic].\n    */\n\n    @SinceKotlin("1.3")\n    @ExperimentalTime\n    public inline fun measureTime(block: () -> Unit): Duration {\n
    contract {\n        callsInPlace(block, InvocationKind.EXACTLY_ONCE)\n    }\n    return
TimeSource.Monotonic.measureTime(block)\n    }\n\n    /**\n    * Executes the given function [block] and returns the
duration of elapsed time interval.\n    * \n    * The elapsed time is measured with the specified `this` [TimeSource]
instance.\n    */\n\n    @SinceKotlin("1.3")\n    @ExperimentalTime\n    public inline fun TimeSource.measureTime(block: ()

```

```

-> Unit): Duration {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    val mark = markNow()
    block()
    return mark.elapsedNow()
}

/** Executes the given function [block] and returns the duration of elapsed time interval.
 * The elapsed time is measured with the specified `this` [TimeSource.Monotonic] instance.
 */
@SinceKotlin("1.7")@ExperimentalTime
public inline fun TimeSource.Monotonic.measureTime(block: () -> Unit): Duration {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    val mark = markNow()
    block()
    return mark.elapsedNow()
}

/** Data class representing a result of executing an action, along with the duration of elapsed time interval.
 * @property value the result of the action.
 * @property duration the time elapsed to execute the action.
 */
@SinceKotlin("1.3")@ExperimentalTime
public data class TimedValue<T>(val value: T, val duration: Duration)

/** Executes the given function [block] and returns an instance of [TimedValue] class, containing both
 * the result of the function execution and the duration of elapsed time interval.
 * The elapsed time is measured with [TimeSource.Monotonic].
 */
@SinceKotlin("1.3")@ExperimentalTime
public inline fun <T> measureTimedValue(block: () -> T): TimedValue<T> {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    return TimeSource.Monotonic.measureTimedValue(block)
}

/** Executes the given [block] and returns an instance of [TimedValue] class, containing both
 * the result of function execution and the duration of elapsed time interval.
 * The elapsed time is measured with the specified `this` [TimeSource] instance.
 */
@SinceKotlin("1.3")@ExperimentalTime
public inline fun <T> TimeSource.measureTimedValue(block: () -> T): TimedValue<T> {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    val mark = markNow()
    val result = block()
    return TimedValue(result, mark.elapsedNow())
}

/** Executes the given [block] and returns an instance of [TimedValue] class, containing both
 * the result of function execution and the duration of elapsed time interval.
 * The elapsed time is measured with the specified `this` [TimeSource.Monotonic] instance.
 */
@SinceKotlin("1.7")@ExperimentalTime
public inline fun <T> TimeSource.Monotonic.measureTimedValue(block: () -> T): TimedValue<T> {
    contract {
        callsInPlace(block, InvocationKind.EXACTLY_ONCE)
    }
    val mark = markNow()
    val result = block()
    return TimedValue(result, mark.elapsedNow())
}

/** Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin
import kotlin.coroutines.*
import kotlin.coroutines.intrinsics.*
import kotlin.native.concurrent.SharedImmutable

/** Defines deep recursive function that keeps its stack on the heap,
 * which allows very deep recursive computations that do not use the actual call stack.
 * To initiate a call to this deep recursive function use its [invoke] function.
 * As a rule of thumb, it should be used if recursion goes deeper than a thousand calls.
 * The [DeepRecursiveFunction] takes one parameter of type [T] and returns a result of type [R].
 * The [block] of code defines the body of a recursive function. In this block
 * [callRecursive][DeepRecursiveScope.callRecursive] function can be used to make a recursive call
 * to the declared function. Other instances of [DeepRecursiveFunction] can be called
 * in this scope with `callRecursive` extension, too.
 * For example, take a look at the following recursive tree class and a deeply
 * recursive instance of this tree with 100K nodes:
 */
class Tree(val left: Tree? = null, val right: Tree? = null) {
    val deepTree = generateSequence(Tree()) { Tree(it) }.take(100_000).last()
}

/** A regular recursive function can be defined to compute a depth of a tree:
 */
fun depth(t: Tree?): Int = if (t == null) 0 else max(depth(t.left), depth(t.right)) + 1
println(depth(deepTree)) // StackOverflowError

/** If this `depth` function is called for a `deepTree` it produces `StackOverflowError` because of deep recursion.
 * However, the `depth` function can be rewritten using `DeepRecursiveFunction` in the following way, and then
 * it successfully computes [depth(deepTree)][DeepRecursiveFunction.invoke] expression:
 */
val depth = DeepRecursiveFunction<Tree?, Int> { t -> if (t == null) 0 else max(callRecursive(t.left),

```

```

callRecursive(t.right)) + 1\n * }\n * println(depth(deepTree)) // Ok\n * ``\n *\n * Deep recursive functions can also
mutually call each other using a heap for the stack via\n * [callRecursive][DeepRecursiveScope.callRecursive]
extension. For example, the\n * following pair of mutually
recursive functions computes the number of tree nodes at even depth in the tree.\n *\n * ``\n *\n * val mutualRecursion
= object {\n *     val even: DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->\n *         if (t ==
null) 0 else odd.callRecursive(t.left) + odd.callRecursive(t.right) + 1\n *     }\n *     val odd:
DeepRecursiveFunction<Tree?, Int> = DeepRecursiveFunction { t ->\n *         if (t == null) 0 else
even.callRecursive(t.left) + even.callRecursive(t.right)\n *     }\n * }\n *\n * @param [T] the function
parameter type.\n * @param [R] the function result type.\n * @param block the function body.\n
*\n * @SinceKotlin("1.7")\n * @WasExperimental(ExperimentalStdlibApi::class)\n * public class
DeepRecursiveFunction<T, R>(\n *     internal val block: suspend DeepRecursiveScope<T, R>.(T) -> R)\n *\n * // **\n *
Initiates a call to this deep recursive function, forming a root of the call tree.\n *\n * This operator should not be
used from inside of [DeepRecursiveScope] as
it uses the call stack slot for\n * initial recursive invocation. From inside of [DeepRecursiveScope] use\n *
[callRecursive][DeepRecursiveScope.callRecursive].\n
*\n * @SinceKotlin("1.7")\n * @WasExperimental(ExperimentalStdlibApi::class)\n * public operator fun <T, R>
DeepRecursiveFunction<T, R>.invoke(value: T): R =\n *     DeepRecursiveScopeImpl<T, R>(block,
value).runCallLoop()\n *\n * // **\n *
A scope class for [DeepRecursiveFunction] function declaration that defines
[callRecursive] methods to\n * recursively call this function or another [DeepRecursiveFunction] putting the call
activation frame on the heap.\n *\n * @param [T] function parameter type.\n * @param [R] function result type.\n
*\n * @RestrictsSuspension\n * @SinceKotlin("1.7")\n * @WasExperimental(ExperimentalStdlibApi::class)\n * public
sealed class DeepRecursiveScope<T, R> {\n *     /**\n *         * Makes recursive call to this [DeepRecursiveFunction]
function putting the call activation frame on the heap,\n *         * as opposed to the actual call
stack that is used by a regular recursive call.\n *         *\n *         public abstract suspend fun callRecursive(value: T): R\n *\n *         /**\n *             * Makes call to the specified [DeepRecursiveFunction] function putting the call activation frame on the
heap,\n *             * as opposed to the actual call stack that is used by a regular call.\n *             *\n *             public abstract suspend fun
<U, S> DeepRecursiveFunction<U, S>.callRecursive(value: U): S\n *\n *             @Deprecated(\n *                 level =
DeprecationLevel.ERROR,\n *                 message =\n *                     "'invoke' should not be called from DeepRecursiveScope. '\n *
+ \n *                     '\n *                     'Use 'callRecursive' to do recursion in the heap instead of the call stack.',\n *                 replaceWith =
ReplaceWith("\n *                 'this.callRecursive(value)')\n *                 )\n *                 @Suppress("\n *                 'UNUSED_PARAMETER')\n *                 public operator
fun DeepRecursiveFunction<*, *>.invoke(value: Any?): Nothing =\n *                     throw
UnsupportedOperationException("Should not be called from DeepRecursiveScope")\n *                 }\n *\n * //
==== Implementation
=====\n *\n * private typealias DeepRecursiveFunctionBlock = suspend DeepRecursiveScope<*,
*>.(Any?) -> Any?\n *\n * @SharedImmutable\n * private val UNDEFINED_RESULT =
Result.success(COROUTINE_SUSPENDED)\n *\n * @Suppress("\n * 'UNCHECKED_CAST')\n * private class
DeepRecursiveScopeImpl<T, R>(\n *     block: suspend DeepRecursiveScope<T, R>.(T) -> R,\n *     value: T)\n * :
DeepRecursiveScope<T, R>(), Continuation<R> {\n *     // Active function block\n *     private var function:
DeepRecursiveFunctionBlock = block as DeepRecursiveFunctionBlock\n *\n *     // Value to call function with\n *
private var value: Any? = value\n *\n *     // Continuation of the current call\n *     private var cont: Continuation<Any?>?
= this as Continuation<Any?>\n *\n *     // Completion result (completion of the whole call stack)\n *     private var result:
Result<Any?> = UNDEFINED_RESULT\n *\n *     override val context: CoroutineContext\n *     get() =
EmptyCoroutineContext\n *\n *     override fun resumeWith(result: Result<R>) {\n *         this.cont =
null\n *         this.result = result\n *     }\n *\n *     override suspend fun callRecursive(value: T): R =
suspendCoroutineUninterceptedOrReturn { cont ->\n *         // calling the same function that is currently active\n *
this.cont = cont as Continuation<Any?>\n *         this.value = value\n *         COROUTINE_SUSPENDED\n *     }\n *\n *     override suspend fun <U, S> DeepRecursiveFunction<U, S>.callRecursive(value: U): S =
suspendCoroutineUninterceptedOrReturn { cont ->\n *         // calling another recursive function\n *         val function =

```

```

block as DeepRecursiveFunctionBlock\n    with(this@DeepRecursiveScopeImpl) {\n        val currentFunction
= this.function\n        if (function !== currentFunction) {\n            // calling a different function -- create a
trampoline to restore function ref\n            this.function = function\n            this.cont =
crossFunctionCompletion(currentFunction, cont as Continuation<Any?>)\n        } else {\n            // calling the
same function -- direct\n            this.cont = cont as Continuation<Any?>\n        }\n        this.value = value\n    }\n    COROUTINE_SUSPENDED\n }\n\n private fun crossFunctionCompletion(\n    currentFunction:
DeepRecursiveFunctionBlock,\n    cont: Continuation<Any?>\n ): Continuation<Any?> =
Continuation(EmptyCoroutineContext) {\n    this.function = currentFunction\n    // When going back from a
trampoline we cannot just call cont.resume (stack usage!)\n    // We delegate the cont.resumeWith(it) call to
runCallLoop\n    this.cont = cont\n    this.result = it\n }\n\n @Suppress(\"UNCHECKED_CAST\")\n fun
runCallLoop(): R {\n    while (true) {\n        // Note: cont is set to null in DeepRecursiveScopeImpl.resumeWith
when the whole computation completes\n        val result = this.result\n        val cont = this.cont\n        ?:
return (result as Result<R>).getOrThrow() // done -- final result\n
        // The order of comparison is important here for that case of rogue class with broken equals\n        if
(UNDEFINED_RESULT == result) {\n            // call \"function\" with \"value\" using \"cont\" as completion\n
            val r = try {\n                // This is block.startCoroutine(this, value, cont)\n
function.startCoroutineUninterceptedOrReturn(this, value, cont)\n            } catch (e: Throwable) {\n
cont.resumeWithException(e)\n                continue\n            }\n            // If the function returns without
suspension -- calls its continuation immediately\n            if (r !== COROUTINE_SUSPENDED)\n                cont.resume(r as R)\n        } else {\n            // we returned from a crossFunctionCompletion trampoline -- call
resume here\n            this.result = UNDEFINED_RESULT // reset result back\n
cont.resumeWith(result)\n        }\n    }\n }\n }\n }\n\n\"/*\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n// Auto-generated file. DO NOT
EDIT!\n\n@file:kotlin.jvm.JvmName(\"NumbersKt\")\n@file:kotlin.jvm.JvmMultifileClass\npackage
kotlin\n\nimport kotlin.math.sign\n\n/** Divides this value by the other value, flooring the result to an integer that is
closer to negative infinity.\n\n*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.floorDiv(other: Byte): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic
inline fun Byte.mod(other: Byte): Byte = \n    this.toInt().mod(other.toInt()).toByte()\n\n/** Divides this value by
the other value, flooring the result to an integer that is closer to negative infinity.\n\n*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.floorDiv(other: Short): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.mod(other: Short): Short = \n    this.toInt().mod(other.toInt()).toShort()\n\n/** Divides this value by the
other value, flooring the result to an integer that is closer to negative infinity.\n\n*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic
inline fun Byte.floorDiv(other: Int): Int = \n    this.toInt().floorDiv(other)\n\n/**\n * Calculates the remainder of
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the
_divisor_ and has the absolute value less than the absolute value of the divisor.\n\n*\n\n@SinceKotlin(\"1.5\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
fun Byte.mod(other: Int): Int = \n    this.toInt().mod(other)\n\n/** Divides this value by the other value, flooring the

```

result to an integer that is closer to negative infinity.

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Byte.floorDiv(other: Long): Long = \n    this.toLong().floorDiv(other)\n\n/**\n * Calculates the remainder of  
flooring division of this value by the other value.\n * \n
```

* The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor.\n

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Byte.mod(other: Long): Long = \n    this.toLong().mod(other)\n\n/** Divides this value by the other value,  
flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Short.floorDiv(other: Byte): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of  
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the  
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Short.mod(other:
```

```
Byte): Byte = \n    this.toInt().mod(other.toInt()).toByte()\n\n/** Divides this value by the other value, flooring the  
result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Short.floorDiv(other: Short): Int = \n    this.toInt().floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of  
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the  
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Short.mod(other: Short): Short = \n    this.toInt().mod(other.toInt()).toShort()\n\n/** Divides this value by the  
other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic  
inline fun Short.floorDiv(other: Int): Int = \n    this.toInt().floorDiv(other)\n\n/**\n * Calculates the remainder of  
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the  
_divisor_ and has the absolute value less than the absolute value of the divisor.\n
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Short.mod(other: Int): Int = \n    this.toInt().mod(other)\n\n/** Divides this value by the other value, flooring the  
result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Short.floorDiv(other: Long): Long = \n    this.toLong().floorDiv(other)\n\n/**\n * Calculates the remainder of  
flooring division of this value by the other value.\n * \n * The result is either zero or has the same sign as the  
_divisor_ and
```

```
has the absolute value less than the absolute value of the divisor.\n
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Short.mod(other: Long): Long = \n    this.toLong().mod(other)\n\n/** Divides this value by the other value,  
flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Int.floorDiv(other: Byte): Int = \n    this.floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring  
division of this value by the other value.\n * \n * The result is either zero or has the same sign as the _divisor_ and  
has the absolute value less than the absolute value of the divisor.\n
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Int.mod(other: Byte): Byte = \n    this.mod(other.toInt()).toByte()\n\n/** Divides this value  
by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin(\\"1.5\\")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline  
fun Int.floorDiv(other: Short): Int = \n    this.floorDiv(other.toInt())\n\n/**\n * Calculates the remainder of flooring
```

division of this value by the other value. \n * \n * The result is either zero or has the same sign as the `_divisor_` and has the absolute value less than the absolute value of the divisor. \n

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.mod(other: Short): Short = \n    this.mod(other.toInt()).toShort()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.floorDiv(other: Int): Int {\n    var q = this / other\n    if (this xor other < 0 && q * other != this) q--\n    return q\n}\n\n/** Calculates the remainder of flooring division of this value by the other value. \n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor. \n
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.mod(other: Int): Int {\n    val r = this % other\n    return r + (other and (((r xor other) and (r or -r)) shr 31))\n}\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.floorDiv(other: Long): Long = \n    this.toLong().floorDiv(other)\n\n/** \n * Calculates the remainder of flooring division of this value by the other value. \n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor. \n
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Int.mod(other: Long): Long = \n    this.toLong().mod(other)\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Byte): Long = \n    this.floorDiv(other.toLong())\n\n/** \n * Calculates the remainder of flooring division of this value by the other value. \n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor. \n
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.mod(other: Byte): Byte = \n    this.mod(other.toLong()).toByte()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Short): Long = \n    this.floorDiv(other.toLong())\n\n/** \n * Calculates the remainder of flooring division of this value by the other value. \n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor. \n
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.mod(other: Short): Short = \n    this.mod(other.toLong()).toShort()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Int): Long = \n    this.floorDiv(other.toLong())\n\n/** \n * Calculates the remainder of flooring division of this value by the other value. \n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor. \n
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.mod(other: Int): Int = \n    this.mod(other.toLong()).toInt()\n\n/** Divides this value by the other value, flooring the result to an integer that is closer to negative infinity.
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline fun Long.floorDiv(other: Long): Long {\n    var q = this / other\n    if (this xor other < 0 && q * other != this) q--\n    return q\n}\n\n/** \n * Calculates the remainder of flooring division of this value by the other value. \n * \n * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor. \n
```

```
*\n@SinceKotlin("1.5")\n@kotlin.internal.InlineOnly\n@kotlin.internal.IntrinsicConstEvaluation\npublic inline
```



```

fun Long.mod(other: Long): Long {
    val r = this % other
    return r + (other and (((r xor other) and (r or -r)) shr 63))
}

/**
 * Calculates the remainder of flooring division of this value by the other value.
 * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
 * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.
 */
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
@kotlin.internal.IntrinsicConstEvaluation
public inline fun Float.mod(other: Float): Float {
    val r = this % other
    return if (r != 0.0.toFloat() && r.sign != other.sign) r +
        other else r
}

/**
 * Calculates the remainder of flooring division of this value by the other value.
 * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
 * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.
 */
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
@kotlin.internal.IntrinsicConstEvaluation
public inline fun Float.mod(other: Double): Double =
    this.toDouble().mod(other)

/**
 * Calculates the remainder of flooring division of this value by the other value.
 * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
 * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.
 */
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
@kotlin.internal.IntrinsicConstEvaluation
public inline fun Double.mod(other: Float): Double =
    this.mod(other.toDouble())

/**
 * Calculates the remainder of flooring division of this value by the other value.
 * The result is either zero or has the same sign as the _divisor_ and has the absolute value less than the absolute value of the divisor.
 * If the result cannot be represented exactly, it is rounded to the nearest representable number. In this case the absolute value of the result can be less than or _equal to_ the absolute value of the divisor.
 */
@SinceKotlin("1.5")
@kotlin.internal.InlineOnly
@kotlin.internal.IntrinsicConstEvaluation
public inline fun Double.mod(other: Double): Double {
    val r = this % other
    return if (r != 0.0 && r.sign != other.sign) r +
        other else r
}

/*
 * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin

nimport kotlin.internal.InlineOnly

/**
 * Returns a hash code value for the object or zero if the object is null.
 * @see Any.hashCode
 */
@SinceKotlin("1.3")
@InlineOnly
public inline fun Any?.hashCode(): Int =
    this?.hashCode() ?: 0

/*
 * Copyright 2010-2020 JetBrains s.r.o. and Kotlin Programming Language contributors.
 * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
 */
package kotlin

/**
 * Represents a version of the Kotlin standard library.
 * [major], [minor] and [patch] are integer components of a version,
 * they must be non-negative and not greater than 255 ([MAX_COMPONENT_VALUE]).
 * @constructor Creates a version from all three components.
 */
@SinceKotlin("1.1")
public class KotlinVersion(val major: Int, val minor: Int, val patch: Int) :
    Comparable<KotlinVersion> {
    /**
     * Creates a version from [major] and [minor] components, leaving [patch] component zero.
     */
    public constructor(major: Int, minor: Int) : this(major, minor, 0)

    private val version = versionOf(major, minor, patch)

    private fun versionOf(major: Int, minor: Int, patch: Int): Int {
        require(major in 0..MAX_COMPONENT_VALUE && minor in 0..MAX_COMPONENT_VALUE && patch in 0..MAX_COMPONENT_VALUE) {
            "Version components are out of range: $major.$minor.$patch"
        }
        return major.shl(16) + minor.shl(8) + patch
    }

    /**
     * Returns the string representation of this version
     */
    override fun toString(): String = "$major.$minor.$patch"

    override fun equals(other: Any?): Boolean {
        if (this === other) return true
        val otherVersion = (other as? KotlinVersion) ?: return false
        return this.version == otherVersion.version
    }

    override fun hashCode(): Int = version

    override fun compareTo(other: KotlinVersion): Int = version - other.version
}

```

```

/**\n * Returns `true` if this version is not less than the version specified\n * with the provided [major] and
[minor] components.\n */\n public fun isAtLeast(major: Int, minor: Int): Boolean = // this.version >=
versionOf(major, minor, 0)\n this.major > major || (this.major == major &&\n this.minor >=
minor)\n\n /**\n * Returns `true` if this version is not less than the version specified\n * with the provided
[major], [minor] and [patch] components.\n */\n public fun isAtLeast(major: Int, minor: Int, patch: Int): Boolean
= // this.version >= versionOf(major, minor, patch)\n this.major > major || (this.major == major &&\n
(this.minor > minor || this.minor == minor &&\n
this.patch >= patch))\n\n companion object {\n /**\n * Maximum value a version component can
have, a constant value 255.\n */\n // NOTE: Must be placed before CURRENT because its initialization
requires this field being initialized in JS\n public const val MAX_COMPONENT_VALUE = 255\n\n /**\n
* Returns the current version of the Kotlin standard library.\n */\n @kotlin.jvm.JvmField\n public
val CURRENT: KotlinVersion = KotlinVersionCurrentValue.get()\n }\n\n// this class is ignored during
classpath normalization when considering whether to recompile dependencies in Kotlin build\nprivate object
KotlinVersionCurrentValue {\n @kotlin.jvm.JvmStatic\n fun get(): KotlinVersion = KotlinVersion(1, 8, 0) //
value is written here automatically during build\n}"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache
2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmName("LateinitKt")\n@file:Suppress("unused")\n\npackage kotlin\n\nimport
kotlin.internal.InlineOnly\nimport kotlin.internal.AccessibleLateinitPropertyLiteral\nimport
kotlin.reflect.KProperty0\n\n/**\n * Returns `true` if this lateinit property has been assigned a value, and `false`
otherwise.\n */\n * Cannot be used in an inline function, to avoid binary compatibility issues.\n
*\n\n@SinceKotlin("1.2")\n@InlineOnly\ninline val @receiver:AccessibleLateinitPropertyLiteral
KProperty0<*>.isInitialized: Boolean\n get() = throw NotImplementedError("Implementation is
intrinsic")\n"/*\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use
of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmName("LazyKt")\n@file:kotlin.jvm.JvmMultifileClass\n\npackage kotlin\n\nimport
kotlin.reflect.KProperty\n\n/**\n * Represents a value with lazy initialization.\n */\n * To create an instance of
[Lazy] use the [lazy] function.\n */\n\npublic interface Lazy<out T> {\n /**\n * Gets the lazily initialized value of
the current Lazy instance.\n * Once the value was initialized it must not change during the rest of lifetime of this
Lazy instance.\n */\n public val value: T\n\n /**\n * Returns `true` if a value for this Lazy instance has been
already initialized, and `false` otherwise.\n * Once this function has returned `true` it stays `true` for the rest of
lifetime of this Lazy instance.\n */\n public fun isInitialized(): Boolean\n}\n\n/**\n * Creates a new instance of
the [Lazy] that is already initialized with the specified [value].\n */\n\npublic fun <T> lazyOf(value: T): Lazy<T> =
InitializedLazyImpl(value)\n\n/**\n * An extension to delegate a read-only property of type [T] to an instance of
[Lazy].\n */\n * This extension allows to
use instances of Lazy for property delegation:\n\n * `val property: String by lazy { initializer }`\n
*\n\n@kotlin.internal.InlineOnly\npublic inline operator fun <T> Lazy<T>.getValue(thisRef: Any?, property:
KProperty<*>): T = value\n\n/**\n * Specifies how a [Lazy] instance synchronizes initialization among multiple
threads.\n */\n\npublic enum class LazyThreadSafetyMode {\n\n /**\n * Locks are used to ensure that only a
single thread can initialize the [Lazy] instance.\n */\n SYNCHRONIZED,\n\n /**\n * Initializer function
can be called several times on concurrent access to uninitialized [Lazy] instance value,\n * but only the first
returned value will be used as the value of [Lazy] instance.\n */\n PUBLICATION,\n\n /**\n * No locks are
used to synchronize an access to the [Lazy] instance value; if the instance is accessed from multiple threads, its
behavior is undefined.\n */\n * This mode should not be used unless the [Lazy] instance is guaranteed
never to be initialized from more than one thread.\n */\n NONE,\n}\n\n\ninternal object
UNINITIALIZED_VALUE\n\n// internal to be called from lazy in JS\ninternal class UnsafeLazyImpl<out
T>(initializer: () -> T) : Lazy<T>, Serializable {\n private var initializer: (() -> T)? = initializer\n private var
_value: Any? = UNINITIALIZED_VALUE\n\n override val value: T\n get() {\n if (_value ===

```

```

UNINITIALIZED_VALUE) {\n        _value = initializer!!()\n        initializer = null\n    }\n    @Suppress(\\"UNCHECKED_CAST\\")\n    return _value as T\n }\n\n override fun isInitialized(): Boolean = _value !== UNINITIALIZED_VALUE\n\n override fun toString(): String = if (isInitialized()) value.toString() else \\"Lazy value not initialized yet.\\\"\n\n private fun writeReplace(): Any = InitializedLazyImpl(value)\n}\n\ninternal class InitializedLazyImpl<out T>(override val value: T) : Lazy<T>, Serializable {\n\n    override fun isInitialized(): Boolean = true\n\n    override fun toString(): String = value.toString()\n}\n\n"/>\n * Copyright 2010-2019 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n\n*/\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName(\\"NumbersKt\\")\npackage kotlin\n\n/**\n * Counts the number of set bits in the binary representation of this [Int] number.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.countOneBits(): Int\n\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [Int] number.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.countLeadingZeroBits(): Int\n\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [Int] number.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.countTrailingZeroBits(): Int\n\n * Returns a number having a single bit set in the position of the most significant set bit of this [Int] number,\n * or zero, if this number is zero.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.takeHighestOneBit(): Int\n\n * Returns a number having a single bit set in the position of the least significant set bit of this [Int] number,\n * or zero, if this number is zero.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.takeLowestOneBit(): Int\n\n * Rotates the binary representation of this [Int] number left by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of [Int.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateLeft(n) == number.rotateLeft(n % 32)`\n\n*/\n@SinceKotlin(\\"1.6\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.rotateLeft(bitCount: Int): Int\n\n * Rotates the binary representation of this [Int] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n * Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of [Int.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 32)`\n\n*/\n@SinceKotlin(\\"1.6\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Int.rotateRight(bitCount: Int): Int\n\n * Counts the number of set bits in the binary representation of this [Long] number.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.countOneBits(): Int\n\n * Counts the number of consecutive most significant bits that are zero in the binary representation of this [Long] number.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.countLeadingZeroBits(): Int\n\n * Counts the number of consecutive least significant bits that are zero in the binary representation of this [Long] number.\n\n*/\n@SinceKotlin(\\"1.4\\")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun Long.countTrailingZeroBits(): Int\n\n * Returns a number having a single bit set in the position of the most significant set bit of this [Long] number,\n * or zero, if this number

```

is zero.
`@SinceKotlin("1.4") WasExperimental(ExperimentalStdlibApi::class) public expect fun Long.takeHighestOneBit(): Long`
 Returns a number having a single bit set in the position of the least significant set bit of this [Long] number, or zero, if this number is zero.

`@SinceKotlin("1.4") WasExperimental(ExperimentalStdlibApi::class) public expect fun Long.takeLowestOneBit(): Long`
 Rotates the binary representation of this [Long] number left by the specified [bitCount] number of bits. The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side. Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count: `number.rotateLeft(-n) == number.rotateRight(n)`
 Rotating by a multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally `number.rotateLeft(n) == number.rotateLeft(n % 64)`

`@SinceKotlin("1.6") WasExperimental(ExperimentalStdlibApi::class) public expect fun Long.rotateLeft(bitCount: Int): Long`
 Rotates the binary representation of this [Long] number right by the specified [bitCount] number of bits. The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side. Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count: `number.rotateRight(-n) == number.rotateLeft(n)`
 Rotating by a multiple of [Long.SIZE_BITS] (64) returns the same number, or more generally `number.rotateRight(n) == number.rotateRight(n % 64)`

`@SinceKotlin("1.6") WasExperimental(ExperimentalStdlibApi::class) public expect fun Long.rotateRight(bitCount: Int): Long`
 Counts the number of set bits in the binary representation of this [Byte] number.

`@SinceKotlin("1.4") WasExperimental(ExperimentalStdlibApi::class) @kotlin.internal.InlineOnly public inline fun Byte.countOneBits(): Int = (toInt() and 0xFF).countOneBits()`
 Counts the number of consecutive most significant bits that are zero in the binary representation of this [Byte] number.

`@SinceKotlin("1.4") WasExperimental(ExperimentalStdlibApi::class) @kotlin.internal.InlineOnly public inline fun Byte.countLeadingZeroBits(): Int = (toInt() and 0xFF).countLeadingZeroBits() - (Int.SIZE_BITS - Byte.SIZE_BITS)`
 Counts the number of consecutive least significant bits that are zero in the binary representation of this [Byte] number.

`@SinceKotlin("1.4") WasExperimental(ExperimentalStdlibApi::class) @kotlin.internal.InlineOnly public inline fun Byte.countTrailingZeroBits(): Int = (toInt() or 0x100).countTrailingZeroBits()`
 Returns a number having a single bit set in the position of the most significant set bit of this [Byte] number, or zero, if this number is zero.

`@SinceKotlin("1.4") WasExperimental(ExperimentalStdlibApi::class) @kotlin.internal.InlineOnly public inline fun Byte.takeHighestOneBit(): Byte = (toInt() and 0xFF).takeHighestOneBit().toByte()`
 Returns a number having a single bit set in the position of the least significant set bit of this [Byte] number, or zero, if this number is zero.

`@SinceKotlin("1.4") WasExperimental(ExperimentalStdlibApi::class) @kotlin.internal.InlineOnly public inline fun Byte.takeLowestOneBit(): Byte = toInt().takeLowestOneBit().toByte()`
 Rotates the binary representation of this [Byte] number left by the specified [bitCount] number of bits. The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side. Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count: `number.rotateLeft(-n) == number.rotateRight(n)`
 Rotating by a multiple of [Byte.SIZE_BITS] (8) returns the same number, or more generally `number.rotateLeft(n) == number.rotateLeft(n % 8)`

`@SinceKotlin("1.6") WasExperimental(ExperimentalStdlibApi::class) public fun Byte.rotateLeft(bitCount: Int): Byte = (toInt().shl(bitCount and 7) or (toInt() and 0xFF).ushr(8 - (bitCount and 7))).toByte()`
 Rotates the binary representation of this [Byte] number right by the specified [bitCount] number of bits. The least significant bits pushed out from the right side reenter the number as the most

significant bits on the left side.
`* Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:
* `number.rotateRight(-n) == number.rotateLeft(n)`
* Rotating by a multiple of [Byte.SIZE_BITS] (8) returns the same number, or more generally
* `number.rotateRight(n) == number.rotateRight(n % 8)`
*
@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
public fun Byte.rotateRight(bitCount: Int): Byte =
(toInt().shl(8 - (bitCount and 7)) or (toInt() and 0xFF).ushr(bitCount and 7)).toByte()
* Counts the number of set bits in the binary representation of this [Short] number.
*
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun Short.countOneBits(): Int = (toInt() and 0xFFFF).countOneBits()
* Counts the number of consecutive most significant bits that are zero in the binary representation of this [Short] number.
*
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun Short.countLeadingZeroBits(): Int =
(toInt() and 0xFFFF).countLeadingZeroBits() - (Int.SIZE_BITS - Short.SIZE_BITS)
* Counts the number of consecutive least significant bits that are zero in the binary representation of this [Short] number.
*
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun Short.countTrailingZeroBits(): Int = (toInt() or 0x10000).countTrailingZeroBits()
* Returns a number having a single bit set in the position of the most significant set bit of this [Short] number,
* or zero, if this number is zero.
*
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun Short.takeHighestOneBit(): Short = (toInt() and 0xFFFF).takeHighestOneBit().toShort()
* Returns a number having a single bit set in the position of the least significant set bit of this [Short] number,
* or zero, if this number is zero.
*
@SinceKotlin("1.4")
@WasExperimental(ExperimentalStdlibApi::class)
@kotlin.internal.InlineOnly
public inline fun Short.takeLowestOneBit(): Short = toInt().takeLowestOneBit().toShort()
* Rotates the binary representation of this [Short] number left by the specified [bitCount] number of bits.
* The most significant bits pushed out from the left side reenter the number as the least significant bits on the right side.
* Rotating the number left by a negative bit count is the same as rotating it right by the negated bit count:
* `number.rotateLeft(-n) == number.rotateRight(n)`
* Rotating by a multiple of [Short.SIZE_BITS] (16) returns the same number, or more generally
* `number.rotateLeft(n) == number.rotateLeft(n % 16)`
*
@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
public fun Short.rotateLeft(bitCount: Int): Short =
(toInt().shl(bitCount and 15) or (toInt() and 0xFFFF).ushr(16 - (bitCount and 15))).toShort()
* Rotates the binary representation of this [Short] number right by the specified [bitCount] number of bits.
* The least significant bits pushed out from the right side reenter the number as the most significant bits on the left side.
* Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:
* `number.rotateRight(-n) == number.rotateLeft(n)`
* Rotating by a multiple of [Short.SIZE_BITS] (16) returns the same number, or more generally
* `number.rotateRight(n) == number.rotateRight(n % 16)`
*
@SinceKotlin("1.6")
@WasExperimental(ExperimentalStdlibApi::class)
public fun Short.rotateRight(bitCount: Int): Short =
(toInt().shl(16 - (bitCount and 15)) or (toInt() and 0xFFFF).ushr(bitCount and 15)).toShort()
* Copyright 2010-2018 JetBrains s.r.o. and Kotlin Programming Language contributors.
* Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.
*
@package kotlin.nimimport kotlin.internal.RequireKotlin
nimimport kotlin.internal.RequireKotlinVersionKind
@kotlin.internal.InlineOnly
@SinceKotlin("1.2")
@Suppress("INVISIBLE_MEMBER", "INVISIBLE_REFERENCE")
public inline fun <R> suspend(noinline block: suspend () -> R): suspend () -> R = block
* Copyright 2010-2018 JetBrains`

```

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license that can be found in the license/LICENSE.txt file.\n
*/\n\n@file:kotlin.jvm.JvmName("TuplesKt")\n\npackage kotlin\n\n/**\n * Represents a generic pair of two
values.\n *\n * There is no meaning attached to values in this class, it can be used for any purpose.\n * Pair exhibits
value semantics, i.e. two pairs are equal if both components are equal.\n *\n * An example of decomposing it into
values:\n * @sample samples.misc.Tuples.pairDestructuring\n *\n * @param A type of the first value.\n * @param
B type of the second value.\n * @property first First value.\n * @property second Second value.\n * @constructor
Creates a new instance of Pair.\n */\n\npublic data class Pair<out A, out B>(\n    public val first: A,\n    public val
second: B\n) : Serializable {\n    /**\n     * Returns string representation of the [Pair] including its [first] and
[second] values.\n     *\n     * public override fun toString(): String = "$first, $second"\n     */\n     * Creates a tuple of type [Pair] from
this and [that].\n     *\n     * This can be useful for creating [Map] literals with less noise, for example:\n     * @sample
samples.collections.Maps.Instantiation.mapFromPairs\n     */\n     * public infix fun <A, B> A.to(that: B): Pair<A, B> =
Pair(this, that)\n     */\n     * Converts this pair into a list.\n     * @sample samples.misc.Tuples.pairToList\n     */\n     * public
fun <T> Pair<T, T>.toList(): List<T> = listOf(first, second)\n     */\n     * Represents a triad of values\n     *\n     * There is
no meaning attached to values in this class, it can be used for any purpose.\n     * Triple exhibits value semantics, i.e.
two triples are equal if all three components are equal.\n     * An example of decomposing it into values:\n     * @sample
samples.misc.Tuples.tripleDestructuring\n     *\n     * @param A type of the first value.\n     * @param B type of the second
value.\n     * @param C type of the third value.\n     * @property first First value.\n     *\n     * @property second Second value.\n     * @property third Third value.\n     */\n     * public data class Triple<out A, out B, out
C>(\n     * public val first: A,\n     * public val second: B,\n     * public val third: C\n     *) : Serializable {\n     *
/**\n     * Returns string representation of the [Triple] including its [first], [second] and [third] values.\n     */\n     * public
override fun toString(): String = "$first, $second, $third"\n     */\n     * Converts this triple into a list.\n     *\n     *
@sample samples.misc.Tuples.tripleToList\n     */\n     * public fun <T> Triple<T, T, T>.toList(): List<T> = listOf(first,
second, third)\n     */\n     */\n     * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language contributors.\n     *
Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n     */\n     */\n     */\n     * Auto-generated file. DO NOT EDIT!\n     */\n     */\n     */\n     * A
range of values of type `UInt`.\n     */\n     */\n     */\n     * Since Kotlin("1.5")\n     */\n     */\n     */\n     * WasExperimental(ExperimentalUnsignedTypes::class)\n     */\n     */\n     */\n     * OptIn(ExperimentalStdlib
Api::class)\n     */\n     */\n     */\n     * public
class UIntRange(start: UInt, endInclusive: UInt) : UIntProgression(start, endInclusive, 1), ClosedRange<UInt>,
OpenEndRange<UInt> {\n     * override val start: UInt get() = first\n     * override val endInclusive: UInt get() = last\n     */\n     */\n     */\n     * @SinceKotlin("1.7")\n     */\n     */\n     */\n     * @ExperimentalStdlibApi\n     */\n     */\n     */\n     * @Deprecated("Can throw an exception when it's
impossible to represent the value with UInt type, for example, when the range includes MAX_VALUE. It's
recommended to use 'endInclusive' property that doesn't throw.")\n     */\n     */\n     */\n     * override val endExclusive: UInt get() {\n     * if (last == UInt.MAX_VALUE) error("Cannot return the exclusive upper bound of a range that includes
MAX_VALUE.")\n     * return last + 1u\n     * }\n     */\n     */\n     */\n     * override fun contains(value: UInt): Boolean = first <= value
&& value <= last\n     */\n     */\n     */\n     * /**\n     * Checks if the range is empty.\n     */\n     */\n     */\n     * \n     */\n     */\n     * The range is empty if its start value is
greater than
the end value.\n     */\n     */\n     */\n     * override fun isEmpty(): Boolean = first > last\n     */\n     */\n     */\n     * override fun equals(other: Any?):
Boolean =\n     * other is UIntRange && (isEmpty() && other.isEmpty()) ||\n     * first == other.first && last ==
other.last\n     */\n     */\n     */\n     * override fun hashCode(): Int =\n     * if (isEmpty()) -1 else (31 * first.toInt() + last.toInt())\n     */\n     */\n     */\n     * override fun toString(): String = "$first..$last"\n     */\n     */\n     */\n     * companion object {\n     * /**\n     * An empty range of values of
type UInt. *\n     * public val EMPTY: UIntRange = UIntRange(UInt.MAX_VALUE, UInt.MIN_VALUE)\n     */\n     */\n     */\n     * }\n     */\n     */\n     */\n     * A progression of values of type `UInt`.\n     */\n     */\n     */\n     */\n     */\n     */\n     */\n     * Since Kotlin("1.5")\n     */\n     */\n     */\n     * WasExperimental(ExperimentalUnsignedTypes::class)\n     */\n     */\n     */\n     * public open class
UIntProgression\n     */\n     */\n     */\n     * internal constructor(\n     * start: UInt,\n     * endInclusive: UInt,\n     * step: Int\n     *) : Iterable<UInt> {\n     * init {\n     * if (step == 0.toInt()) throw kotlin.IllegalArgumentException("Step must be non-zero.")\n     * if (step

```



```

open class ULongProgression\ninternal constructor(\n start: ULong,\n endInclusive: ULong,\n step: Long\n) :
Iterable<ULong> {\n init {\n if (step == 0.toLong()) throw kotlin.IllegalArgumentException("\nStep must be
non-zero.\n")\n if (step == Long.MIN_VALUE) throw kotlin.IllegalArgumentException("\nStep must be greater
than Long.MIN_VALUE to avoid overflow on negation.\n")\n }\n\n /**\n * The first element in the
progression.\n */\n public val first: ULong = start\n\n /**\n * The last element in the progression.\n */\n
public val last: ULong = getProgressionLastElement(start, endInclusive, step)\n\n /**\n * The step of the
progression.\n */\n public val step: Long = step\n\n final override fun iterator(): Iterator<ULong> =
ULongProgressionIterator(first, last, step)\n\n /**\n * Checks if the progression is empty.\n */\n *
Progression with a positive step is empty if its
first element is greater than the last element.\n * Progression with a negative step is empty if its first element is
less than the last element.\n */\n public open fun isEmpty(): Boolean = if (step > 0) first > last else first <
last\n\n override fun equals(other: Any?): Boolean =\n other is ULongProgression && (isEmpty() &&
other.isEmpty()) ||\n first == other.first && last == other.last && step == other.step)\n\n override fun
hashCode(): Int =\n if (isEmpty()) -1 else (31 * (31 * (first xor (first shr 32)).toInt()) + (last xor (last shr
32)).toInt()) + (step xor (step ushr 32)).toInt())\n\n override fun toString(): String = if (step > 0) \"$first..$last step
$step\" else \"$first downTo $last step ${-step}\"\n\n companion object {\n /**\n * Creates
ULongProgression within the specified bounds of a closed range.\n\n * The progression starts with the
[rangeStart] value and goes toward the [rangeEnd] value not excluding
it, with the specified [step].\n * In order to go backwards the [step] must be negative.\n */\n * [step]
must be greater than `Long.MIN_VALUE` and not equal to zero.\n */\n public fun
fromClosedRange(rangeStart: ULong, rangeEnd: ULong, step: Long): ULongProgression =
ULongProgression(rangeStart, rangeEnd, step)\n } }\n\n /**\n * An iterator over a progression of values of type
`ULong`.\n * @property step the number by which the value is incremented on each step.\n */\n * @SinceKotlin("1.3")\nprivate class ULongProgressionIterator(first: ULong, last: ULong, step: Long) :
Iterator<ULong> {\n private val finalElement = last\n private var hasNext: Boolean = if (step > 0) first <= last
else first >= last\n private val step = step.toULong() // use 2-complement math for negative steps\n private var
next = if (hasNext) first else finalElement\n\n override fun hasNext(): Boolean = hasNext\n\n override fun
next(): ULong {\n
val value = next\n if (value == finalElement) {\n if (!hasNext) throw
kotlin.NoSuchElementException()\n hasNext = false\n } else {\n next += step\n }\n
return value\n }\n }\n\n", /*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the
license/LICENSE.txt file.\n */\n\npackage kotlin.math\n\n/**\n * Returns the smaller of two values.\n */\n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalUnsignedTypes::class)\n * @kotlin.internal.InlineOnly\npublic inline fun min(a: UInt, b: UInt): UInt {\n return minOf(a, b)\n }\n\n/**\n * Returns the smaller of two
values.\n */\n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalUnsignedTypes::class)\n * @kotlin.internal.InlineOnly\npublic inline fun min(a: ULong, b: ULong): ULong {\n return minOf(a, b)\n }\n\n/**\n * Returns the greater of
two values.\n */\n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalUnsignedTypes::class)\n * @kotlin.internal.InlineOnly\npublic
inline fun max(a: UInt, b: UInt): UInt {\n return maxOf(a, b)\n }\n\n/**\n * Returns the greater of two values.\n */\n * @SinceKotlin("1.5")\n * @WasExperimental(ExperimentalUnsignedTypes::class)\n * @kotlin.internal.InlineOnly\npublic inline fun max(a: ULong, b: ULong): ULong {\n return maxOf(a, b)\n }\n\n", /*\n * Copyright 2010-2021
JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n */\n\n * @file:kotlin.jvm.JvmName("\nUNumbersKt\n")\npackage kotlin\n\n/**\n * Counts the number of set bits in the
binary representation of this [UInt] number.\n */

```



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*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countOneBits(): Int =
toInt().countOneBits()\n\n/*\n * Counts
the number of consecutive most significant bits that are zero in the binary representation of this [UInt] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countLeadingZeroBits(): Int =
toInt().countLeadingZeroBits()\n\n/*\n * Counts the number of consecutive least significant bits that are zero in the
binary representation of this [UInt] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.countTrailingZeroBits(): Int =
toInt().countTrailingZeroBits()\n\n/*\n * Returns a number having a single bit set in the position of the most
significant set bit of this [UInt] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun UInt.takeHighestOneBit(): UInt = toInt().takeHighestOneBit().toUInt()\n\n/*\n * Returns a number
having a single bit set in the position of the least significant set bit of this [UInt] number,\n * or zero, if this number
is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.takeLowestOneBit(): UInt =
toInt().takeLowestOneBit().toUInt()\n\n/*\n * Rotates the binary representation of this [UInt] number left by the
specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the number as
the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the same as
rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a
multiple of [UInt.SIZE_BITS] (32) returns the same number, or more generally\n * `number.rotateLeft(n)
== number.rotateLeft(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UInt.rotateLeft(bitCount: Int):
UInt = toInt().rotateLeft(bitCount).toUInt()\n\n/*\n * Rotates the binary representation of this [UInt] number
right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side reenter
the number as the most significant bits on the left side.\n * Rotating the number right by a negative bit count is
the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) == number.rotateLeft(n)`\n *
Rotating by a multiple of [UInt.SIZE_BITS] (32) returns the same number, or more generally\n *
`number.rotateRight(n) == number.rotateRight(n % 32)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline
fun UInt.rotateRight(bitCount: Int): UInt = toInt().rotateRight(bitCount).toUInt()\n\n/*\n * Counts the number of
set bits in the binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countOneBits(): Int =
toLong().countOneBits()\n\n/*\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.countLeadingZeroBits(): Int =
toLong().countLeadingZeroBits()\n\n/*\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [ULong] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic
inline fun ULong.countTrailingZeroBits(): Int = toLong().countTrailingZeroBits()\n\n/*\n * Returns a number
having a single bit set in the position of the most significant set bit of this [ULong] number,\n * or zero, if this
number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,

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ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeHighestOneBit(): ULong
= toLong().takeHighestOneBit().toULong()\n\n/**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [ULong] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.takeLowestOneBit(): ULong
= toLong().takeLowestOneBit().toULong()\n\n/**\n * Rotates the binary representation of this [ULong] number left
by the specified [bitCount]
number of bits.\n * The most significant bits pushed out from the left side reenter the number as the least significant
bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the
negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of
[ULong.SIZE_BITS] (64) returns the same number, or more generally\n * `number.rotateLeft(n) ==
number.rotateLeft(n % 64)`\n *\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.rotateLeft(bitCount:
Int): ULong = toLong().rotateLeft(bitCount).toULong()\n\n/**\n * Rotates the binary representation of this [ULong]
number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the right side
reenter the number as the most significant bits on the left side.\n * Rotating the number right by a negative
bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) ==
number.rotateLeft(n)`\n * Rotating by a multiple of [ULong.SIZE_BITS] (64) returns the same number, or more
generally\n * `number.rotateRight(n) == number.rotateRight(n % 64)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun ULong.rotateRight(bitCount:
Int): ULong = toLong().rotateRight(bitCount).toULong()\n\n/**\n * Counts the number of set bits in the binary
representation of this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countOneBits(): Int =
toUInt().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countLeadingZeroBits(): Int
= toByte().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [UByte] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.countTrailingZeroBits(): Int =
toByte().countTrailingZeroBits()\n\n/**\n * Returns a number having a single bit set in the position of the most
significant set bit of this [UByte] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.takeHighestOneBit(): UByte
= toInt().takeHighestOneBit().toUByte()\n\n/**\n * Returns a number having a single bit set in the position
of the least significant set bit of this [UByte] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.takeLowestOneBit(): UByte =
toInt().takeLowestOneBit().toUByte()\n\n/**\n * Rotates the binary representation of this [UByte] number left by
the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the
number as the least significant bits on the right side.\n * Rotating the number left by a negative bit count is the
same as rotating it right by the negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n *
Rotating by a multiple of [UByte.SIZE_BITS] (8) returns the same number, or more generally\n *
`number.rotateLeft(n) == number.rotateLeft(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,

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ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic
inline fun UByte.rotateLeft(bitCount: Int): UByte = toByte().rotateLeft(bitCount).toUByte()\n\n/**\n * Rotates the
binary representation of this [UByte] number right by the specified [bitCount] number of bits.\n * The least
significant bits pushed out from the right side reenter the number as the most significant bits on the left side.\n *
Rotating the number right by a negative bit count is the same as rotating it left by the negated bit count:\n *
`number.rotateRight(-n) == number.rotateLeft(n)`\n * Rotating by a multiple of [UByte.SIZE_BITS] (8) returns
the same number, or more generally\n * `number.rotateRight(n) == number.rotateRight(n % 8)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UByte.rotateRight(bitCount:
Int): UByte = toByte().rotateRight(bitCount).toUByte()\n\n/**\n * Counts the number of set bits in the
binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countOneBits(): Int =
toUInt().countOneBits()\n\n/**\n * Counts the number of consecutive most significant bits that are zero in the
binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countLeadingZeroBits(): Int
= toShort().countLeadingZeroBits()\n\n/**\n * Counts the number of consecutive least significant bits that are zero
in the binary representation of this [UShort] number.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.countTrailingZeroBits(): Int
= toShort().countTrailingZeroBits()\n\n/**\n * Returns
a number having a single bit set in the position of the most significant set bit of this [UShort] number,\n * or zero, if
this number is zero.\n *
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeHighestOneBit(): UShort
= toInt().takeHighestOneBit().toUShort()\n\n/**\n * Returns a number having a single bit set in the position of the
least significant set bit of this [UShort] number,\n * or zero, if this number is zero.\n
*\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class,
ExperimentalStdlibApi::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.takeLowestOneBit(): UShort
= toInt().takeLowestOneBit().toUShort()\n\n/**\n * Rotates the binary representation of this [UShort] number left
by the specified [bitCount] number of bits.\n * The most significant bits pushed out from the left side reenter the
number as the least significant
bits on the right side.\n * Rotating the number left by a negative bit count is the same as rotating it right by the
negated bit count:\n * `number.rotateLeft(-n) == number.rotateRight(n)`\n * Rotating by a multiple of
[UShort.SIZE_BITS] (16) returns the same number, or more generally\n * `number.rotateLeft(n) ==
number.rotateLeft(n % 16)`\n *
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.rotateLeft(bitCount:
Int): UShort = toShort().rotateLeft(bitCount).toUShort()\n\n/**\n * Rotates the binary representation of this
[UShort] number right by the specified [bitCount] number of bits.\n * The least significant bits pushed out from the
right side reenter the number as the most significant bits on the left side.\n * Rotating the number right by a
negative bit count is the same as rotating it left by the negated bit count:\n * `number.rotateRight(-n) ==
number.rotateLeft(n)`\n
*\n * Rotating by a multiple of [UShort.SIZE_BITS] (16) returns the same number, or more generally\n *
`number.rotateRight(n) == number.rotateRight(n % 16)`\n
*\n@SinceKotlin("1.6")\n@WasExperimental(ExperimentalStdlibApi::class,
ExperimentalUnsignedTypes::class)\n@kotlin.internal.InlineOnly\npublic inline fun UShort.rotateRight(bitCount:
Int): UShort = toShort().rotateRight(bitCount).toUShort()\n\n"/*\n * Copyright 2010-2021 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be

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found in the license/LICENSE.txt file.\n *\n\npackage kotlin.internal\n\n// (a - b) mod c\nprivate fun
differenceModulo(a: UInt, b: UInt, c: UInt): UInt {\n    val ac = a % c\n    val bc = b % c\n    return if (ac >= bc) ac -
bc else ac - bc + c\n}\n\nprivate fun differenceModulo(a: ULong, b: ULong, c: ULong): ULong {\n    val ac = a %
c\n    val bc = b % c\n    return if (ac >= bc) ac - bc else ac - bc + c\n}\n\n/**\n
* Calculates the final element of a bounded arithmetic progression, i.e. the last element of the progression which is
in the range\n * from [start] to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n *
[step].\n *\n * No validation on passed parameters is performed. The given parameters should satisfy the
condition:\n *\n * - either `step > 0` and `start <= end`,\n * - or `step < 0` and `start >= end`.\n *\n * @param start
first element of the progression\n * @param end ending bound for the progression\n * @param step increment, or
difference of successive elements in the progression\n * @return the final element of the progression\n *\n
@suppress\n *\n@PublishedApi\n@SinceKotlin("1.3")\n\ninternal fun getProgressionLastElement(start: UInt, end:
UInt, step: Int): UInt = when {\n    step > 0 -> if (start >= end) end else end - differenceModulo(end, start,
step.toUInt())\n    step < 0 -> if (start <= end) end else end + differenceModulo(start,
end, (-step).toUInt())\n    else -> throw kotlin.IllegalArgumentException("Step is zero.")\n}\n\n/**\n
* Calculates the final element of a bounded arithmetic progression, i.e. the last element of the progression which is in the range\n
* from [start] to [end] in case of a positive [step], or from [end] to [start] in case of a negative\n * [step].\n *\n
* No validation on passed parameters is performed. The given parameters should satisfy the condition:\n *\n * - either
`step > 0` and `start <= end`,\n * - or `step < 0` and `start >= end`.\n *\n * @param start first element of the
progression\n * @param end ending bound for the progression\n * @param step increment, or difference of
successive elements in the progression\n * @return the final element of the progression\n *\n
@suppress\n *\n@PublishedApi\n@SinceKotlin("1.3")\n\ninternal fun getProgressionLastElement(start: ULong, end: ULong,
step: Long): ULong = when {\n    step > 0 -> if (start >= end) end else end - differenceModulo(end,
start, step.toULong())\n    step < 0 -> if (start <= end) end else end + differenceModulo(start, end, (-
step).toULong())\n    else -> throw kotlin.IllegalArgumentException("Step is zero.")\n}\n\n"/*\n * Copyright 2010-
2021 JetBrains s.r.o. and Kotlin Programming Language contributors.\n * Use of this source code is governed by the
Apache 2.0 license that can be found in the license/LICENSE.txt file.\n
*\n\n@file:kotlin.jvm.JvmName("UStringsKt") // string representation of unsigned numbers\n\npackage
kotlin.text\n\n/**\n * Returns a string representation of this [Byte] value in the specified [radix].\n *\n * @throws
IllegalArgumentException when [radix] is not a valid radix for number to string conversion.\n
*\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n\n@kotlin.internal.InlineOnly
\npublic /*inline*/ fun UByte.toString(radix: Int): String = this.toInt().toString(radix)\n\n/**\n * Returns a string
representation of this [Short] value in the specified
[radix].\n *\n * @throws IllegalArgumentException when [radix] is not a valid radix for number to string
conversion.\n
*\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n\n@kotlin.internal.InlineOnly
\npublic /*inline*/ fun UShort.toString(radix: Int): String = this.toInt().toString(radix)\n\n\n/**\n * Returns a string
representation of this [Int] value in the specified [radix].\n *\n * @throws IllegalArgumentException when [radix] is
not a valid radix for number to string conversion.\n
*\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n\n@kotlin.internal.InlineOnly
\npublic /*inline*/ fun UInt.toString(radix: Int): String = this.toLong().toString(radix)\n\n\n/**\n * Returns a string
representation of this [Long] value in the specified [radix].\n *\n * @throws IllegalArgumentException when [radix]
is not a valid radix for number to string conversion.\n
*\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n\npublic
fun ULong.toString(radix: Int): String = ulongToString(this.toLong(), checkRadix(radix))\n\n\n/**\n * Parses the
string as a signed [UByte] number and returns the result.\n * @throws NumberFormatException if the string is not a
valid representation of a number.\n
*\n *\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\n\npublic fun String.toUByte():
UByte = toUByteOrNull() ?: numberFormatException(this)\n\n\n/**\n * Parses the string as a signed [UByte] number and

```



```

fun String.toUIntOrNull(): UInt? = toUIntOrNull(radix = 10)\n\n/**\n * Parses the string as an [UInt] number and
returns the result\n * or `null` if the string is not a valid representation of a number.\n *\n * @throws
IllegalArgumentException when [radix] is not a valid radix for string to number conversion.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toUIntOrNull(radix: Int): UInt? {\n    checkRadix(radix)\n    val length = this.length\n    if (length == 0)
return null\n    val limit: UInt = UInt.MAX_VALUE\n    val start: Int\n    val firstChar = this[0]\n    if (firstChar
< '0') {\n        if (length == 1 || firstChar != '+') return null\n        start = 1\n    } else {\n        start = 0\n    }\n    val
limitForMaxRadix = 119304647u // limit / 36\n    var limitBeforeMul = limitForMaxRadix\n    val uradix =
radix.toUInt()\n    var result = 0u\n    for (i
in start until length) {\n        val digit = digitOf(this[i], radix)\n        if (digit < 0) return null\n        if (result >
limitBeforeMul) {\n            if (limitBeforeMul == limitForMaxRadix) {\n                limitBeforeMul = limit /
uradix\n                if (result > limitBeforeMul) {\n                    return null\n                }\n            } else {\n
return null\n            }\n        }\n        result *= uradix\n        val beforeAdding = result\n        result +=
digit.toUInt()\n        if (result < beforeAdding) return null // overflow has happened\n    }\n    return
result\n}\n\n/**\n * Parses the string as an [ULong] number and returns the result\n * or `null` if the string is not a
valid representation of a number.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toULongOrNull(): ULong? = toULongOrNull(radix = 10)\n\n/**\n * Parses the string as an [ULong] number
and returns the result\n
* or `null` if the string is not a valid representation of a number.\n *\n * @throws IllegalArgumentException when
[radix] is not a valid radix for string to number conversion.\n
*/\n@SinceKotlin("1.5")\n@WasExperimental(ExperimentalUnsignedTypes::class)\npublic fun
String.toULongOrNull(radix: Int): ULong? {\n    checkRadix(radix)\n    val length = this.length\n    if (length ==
0) return null\n    val limit: ULong = ULong.MAX_VALUE\n    val start: Int\n    val firstChar = this[0]\n    if
(firstChar < '0') {\n        if (length == 1 || firstChar != '+') return null\n        start = 1\n    } else {\n        start = 0\n
}\n    val limitForMaxRadix = 512409557603043100uL // limit / 36\n    var limitBeforeMul =
limitForMaxRadix\n    val uradix = radix.toULong()\n    var result = 0uL\n    for (i in start until length) {\n        val
digit = digitOf(this[i], radix)\n        if (digit < 0) return null\n        if (result > limitBeforeMul) {\n            if
(limitBeforeMul
== limitForMaxRadix) {\n                limitBeforeMul = limit / uradix\n                if (result > limitBeforeMul) {\n
return null\n                }\n            } else {\n                return null\n            }\n        }\n        result *=
uradix\n        val beforeAdding = result\n        result += digit.toUInt()\n        if (result < beforeAdding) return null
// overflow has happened\n    }\n    return result\n}\n\n"/**\n * Copyright 2010-2018 JetBrains s.r.o. and Kotlin
Programming Language contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be
found in the license/LICENSE.txt file.\n */\n@file:Suppress("INVISIBLE_REFERENCE",
"INVISIBLE_MEMBER")\npackage kotlin\nimport kotlin.annotation.AnnotationTarget.*\nimport
kotlin.internal.RequireKotlin\nimport kotlin.internal.RequireKotlinVersionKind\n\n/**\n * Marks the API that is
dependent on the experimental unsigned types, including those types themselves.\n
*\n * Usages of such API will be reported as warnings unless an explicit opt-in with\n * the [OptIn] annotation, e.g.
`@OptIn(ExperimentalUnsignedTypes::class)`,\n * or with the `-opt-in=kotlin.ExperimentalUnsignedTypes`
compiler option is given.\n *\n * It's recommended to propagate the experimental status to the API that depends on
unsigned types by annotating it with this annotation.\n */\n@RequiresOptIn(level =
RequiresOptIn.Level.WARNING)\n@MustBeDocumented\n@Target(CLASS, ANNOTATION_CLASS,
PROPERTY, FIELD, LOCAL_VARIABLE, VALUE_PARAMETER, CONSTRUCTOR, FUNCTION,
PROPERTY_GETTER, PROPERTY_SETTER,
TYPEALIAS)\n@Retention(AnnotationRetention.BINARY)\npublic annotation class
ExperimentalUnsignedTypes\n\n"/**\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language
contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the

```

license/LICENSE.txt file.\n

```
*\n\n@file:kotlin.jvm.JvmMultifileClass\n@file:kotlin.jvm.JvmName("MathKt")\n\n\npackage  
kotlin.math\n\n\n// constants, can't use them from nativeMath as they are not constants there\n\n/** Ratio of the  
circumference of a circle to its diameter, approximately 3.14159. *\n@SinceKotlin("1.2")\npublic const val PI:  
Double = 3.141592653589793\n\n/** Base of the natural logarithms, approximately 2.71828.  
\n@SinceKotlin("1.2")\npublic const val E: Double = 2.718281828459045\n\n// region =====  
Double Math =====\n\n/** Computes the sine of the angle [x]  
given in radians.\n * \n * Special cases:\n * - `sin(NaN|+Inf|-Inf)` is `NaN`\n *\n@SinceKotlin("1.2")\npublic  
expect fun sin(x: Double): Double\n\n/** Computes the cosine of the angle [x] given in radians.\n * \n * Special  
cases:\n * - `cos(NaN|+Inf|-Inf)` is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun cos(x: Double):  
Double\n\n/** Computes the tangent of the angle [x] given in radians.\n * \n * Special cases:\n * - `tan(NaN|+Inf|-  
Inf)` is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun tan(x: Double): Double\n\n/** \n * Computes the arc sine of the value  
[x];\n * the returned value is an angle in the range from  $-\pi/2$  to  $\pi/2$  radians.\n * \n * Special cases:\n * -  
`asin(x)` is `NaN`, when  $abs(x) > 1$  or x is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun asin(x: Double):  
Double\n\n/** \n * Computes the arc cosine of the value [x];\n * the returned value is an angle in the range from  
 $0.0$  to  $\pi$  radians.\n * \n * Special cases:\n * - `acos(x)` is `NaN`, when  $abs(x) > 1$  or x is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun acos(x: Double): Double\n\n/** \n * Computes the arc tangent of the  
value [x];\n * the returned value is an angle in the range from  $-\pi/2$  to  $\pi/2$  radians.\n * \n * Special cases:\n * -  
`atan(NaN)` is `NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun atan(x: Double): Double\n\n/** \n * Returns  
the angle `theta` of the polar coordinates `(r, theta)` that correspond\n * to  
the rectangular coordinates `(x, y)` by computing the arc tangent of the value  $y / x$ ;\n * the returned value is an  
angle in the range from  $-\pi$  to  $\pi$  radians.\n * \n * Special cases:\n * - `atan2(0.0, 0.0)` is  $0.0$ \n * - `atan2(0.0,  
x)` is  $0.0$  for  $x > 0$  and  $\pi$  for  $x < 0$ \n * - `atan2(-0.0, x)` is  $-0.0$  for  $x > 0$  and  $-\pi$  for  $x < 0$ \n * -  
`atan2(y, +Inf)` is  $0.0$  for  $0 < y < +Inf$  and  $-0.0$  for  $-Inf < y < 0$ \n * - `atan2(y, -Inf)` is  $\pi$  for  $0 < y < +Inf$   
and  $-\pi$  for  $-Inf < y < 0$ \n * - `atan2(y, 0.0)` is  $\pi/2$  for  $y > 0$  and  $-\pi/2$  for  $y < 0$ \n * - `atan2(+Inf, x)` is  
 $\pi/2$  for finite  $x$ \n * - `atan2(-Inf, x)` is  $-\pi/2$  for finite  $x$ \n * - `atan2(NaN, x)` and `atan2(y, NaN)` is  
`NaN`\n *\n@SinceKotlin("1.2")\npublic expect fun atan2(y: Double, x: Double): Double\n\n/** \n * Computes  
the hyperbolic sine of the value [x].\n * \n * Special cases:\n * - `sinh(NaN)` is `NaN`\n * - `sinh(+Inf)` is  $+Inf$ \n *  
- `sinh(-Inf)` is  $-Inf$ \n *\n@SinceKotlin("1.2")\npublic expect fun sinh(x: Double): Double\n\n/** \n * Computes the hyperbolic cosine  
of the value [x].\n * \n * Special cases:\n * - `cosh(NaN)` is `NaN`\n * - `cosh(+Inf|-Inf)` is  $+Inf$ \n *\n@SinceKotlin("1.2")\npublic expect fun cosh(x: Double): Double\n\n/** \n * Computes the hyperbolic tangent  
of the value [x].\n * \n * Special cases:\n * - `tanh(NaN)` is `NaN`\n * - `tanh(+Inf)` is  $1.0$ \n * - `tanh(-Inf)` is  $-  
1.0$ \n *\n@SinceKotlin("1.2")\npublic expect fun tanh(x: Double): Double\n\n/** \n * Computes the inverse  
hyperbolic sine of the value [x].\n * \n * The returned value is `y` such that  $sinh(y) == x$ .\n * \n * Special cases:\n *  
- `asinh(NaN)` is `NaN`\n * - `asinh(+Inf)` is  $+Inf$ \n * - `asinh(-Inf)` is  $-Inf$ \n *\n@SinceKotlin("1.2")\npublic expect fun asinh(x: Double): Double\n\n/** \n * Computes the inverse hyperbolic  
cosine of the value [x].\n * \n * The returned value is positive `y` such that  $cosh(y) == x$ .\n * \n * Special  
cases:\n * - `acosh(NaN)` is `NaN`\n * - `acosh(x)` is `NaN` when  $x < 1$ \n * - `acosh(+Inf)` is  $+Inf$ \n *\n@SinceKotlin("1.2")\npublic expect fun acosh(x: Double): Double\n\n/** \n * Computes the inverse hyperbolic  
tangent of the value [x].\n * \n * The returned value is `y` such that  $tanh(y) == x$ .\n * \n * Special cases:\n * -  
`tanh(NaN)` is `NaN`\n * - `tanh(x)` is `NaN` when  $x > 1$  or  $x < -1$ \n * - `tanh(1.0)` is  $+Inf$ \n * - `tanh(-  
1.0)` is  $-Inf$ \n *\n@SinceKotlin("1.2")\npublic expect fun atanh(x: Double): Double\n\n/** \n * Computes  
 $\sqrt{x^2 + y^2}$  without intermediate overflow or underflow.\n * \n * Special cases:\n * - returns  $+Inf$  if any of  
arguments is infinite\n * - returns `NaN` if any of arguments is `NaN` and the other is not infinite\n *\n@SinceKotlin("1.2")\npublic expect fun hypot(x: Double, y: Double): Double\n\n/** \n * Computes the  
positive square root of the value [x].\n * \n * Special cases:\n * - `sqrt(x)` is `NaN` when  $x$ 
```

`< 0` or `x` is `NaN``
`@SinceKotlin("1.2")\npublic expect fun sqrt(x: Double): Double`
 Computes Euler's number `e`` raised to the power of the value `[x]`.
 Special cases:
`-`exp(NaN)` is `NaN``
`-`exp(+Inf)` is `+Inf``
`-`exp(-Inf)` is `0.0``
`@SinceKotlin("1.2")\npublic expect fun exp(x: Double): Double`
 Computes `exp(x) - 1``.
 This function can be implemented to produce more precise result for `[x]` near zero.
 Special cases:
`-`expm1(NaN)` is `NaN``
`-`expm1(+Inf)` is `+Inf``
`-`expm1(-Inf)` is `-1.0``
 @see `[exp]` function.
`@SinceKotlin("1.2")\npublic expect fun expm1(x: Double): Double`
 Computes the logarithm of the value `[x]` to the given `[base]`.
 Special cases:
`-`log(x, b)` is `NaN` if either `x` or `b` are `NaN``
`-`log(x, b)` is `NaN` when `x < 0` or `b <= 0` or `b == 1.0``
`-`log(+Inf, +Inf)` is `NaN``
`-`log(+Inf, b)` is `+Inf` for `b > 1` and `-Inf` for `b < 1``
`-`log(0.0, b)` is `-Inf` for `b > 1` and `+Inf` for `b > 1``
 See also logarithm functions for common fixed bases: `[ln]`, `[log10]` and `[log2]`.
`@SinceKotlin("1.2")\npublic expect fun log(x: Double, base: Double): Double`
 Computes the natural logarithm (base `E``) of the value `[x]`.
 Special cases:
`-`ln(NaN)` is `NaN``
`-`ln(x)` is `NaN` when `x < 0.0``
`-`ln(+Inf)` is `+Inf``
`-`ln(0.0)` is `-Inf``
`@SinceKotlin("1.2")\npublic expect fun ln(x: Double): Double`
 Computes the common logarithm (base 10) of the value `[x]`.
 @see `[ln]` function for special cases.
`@SinceKotlin("1.2")\npublic expect fun log10(x: Double): Double`
 Computes the binary logarithm (base 2) of the value `[x]`.
 @see `[ln]` function for special cases.
`@SinceKotlin("1.2")\npublic expect fun log2(x: Double): Double`
 Computes `ln(x + 1)``.
 This function can be implemented to produce more precise result for `[x]` near zero.
 Special cases:
`-`ln1p(NaN)` is `NaN``
`-`ln1p(x)` is `NaN` where `x < -1.0``
`-`ln1p(-1.0)` is `-Inf``
`-`ln1p(+Inf)` is `+Inf``
 @see `[ln]` function
 @see `[expm1]` function
`@SinceKotlin("1.2")\npublic expect fun ln1p(x: Double): Double`
 Rounds the given value `[x]` to an integer towards positive infinity.
 @return the smallest double value that is greater than or equal to the given value `[x]` and is a mathematical integer.
 Special cases:
`-`ceil(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.`
`@SinceKotlin("1.2")\npublic expect fun ceil(x: Double): Double`
 Rounds the given value `[x]` to an integer towards negative infinity.
 @return the largest double value that is smaller than or equal to the given value `[x]` and is a mathematical integer.
 Special cases:
`-`floor(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.`
`@SinceKotlin("1.2")\npublic expect fun floor(x: Double): Double`
 Rounds the given value `[x]` to an integer towards zero.
 @return the value `[x]` having its fractional part truncated.
 Special cases:
`-`truncate(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.`
`@SinceKotlin("1.2")\npublic expect fun truncate(x: Double): Double`
 Rounds the given value `[x]` towards the closest integer with ties rounded towards even integer.
 Special cases:
`-`round(x)` is `x` where `x` is `NaN` or `+Inf` or `-Inf` or already a mathematical integer.`
`@SinceKotlin("1.2")\npublic expect fun round(x: Double): Double`
 Returns the absolute value of the given value `[x]`.
 Special cases:
`-`abs(NaN)` is `NaN``
 @see `absoluteValue` extension property for `[Double]`
`@SinceKotlin("1.2")\npublic expect fun abs(x: Double): Double`
 Returns the sign of the given value `[x]`:
`-`-1.0` if the value is negative,`
`- zero if the value is zero,`
`-`1.0` if the value is positive`
 Special case:
`-`sign(NaN)` is `NaN``
`@SinceKotlin("1.2")\npublic expect fun sign(x: Double): Double`
 Returns the smaller of two values.
 If either value is `NaN``, then the result is `NaN``.
`@SinceKotlin("1.2")\npublic expect fun min(a: Double, b: Double): Double`
 Returns the greater of two values.
 If either value is `NaN``, then the result is `NaN``.
`@SinceKotlin("1.2")\npublic expect fun max(a: Double, b: Double): Double`
 Returns the cube root of `[x]`. For any `x``, `cbrt(-x) == -cbrt(x)``; that is, the cube root of a negative value is the negative of the cube root of that value's magnitude.
 Special cases:
 Special cases:
`- If the argument is `NaN`, then the result is `NaN`.`
`- If the argument is infinite, then the result is an infinity with the same sign as the argument.`
`- If the argument is zero, then the result is a zero with the same sign as the argument.`
`@SinceKotlin("1.8")\n@WasExperimental(ExperimentalStdlibApi::class)\npublic expect fun cbrt(x: Double): Double`
 Raises this value to the power `[x]`.
 Special

cases: $b^{0.0}$ is 1.0 $b^{1.0} == b$ b^{NaN} is NaN NaN^x is NaN for $x \neq 0.0$ b^{Inf} is NaN for $\text{abs}(b) == 1.0$ b^x is NaN for $b < 0$ and x is finite and not an integer

`SinceKotlin("1.2")\npublic expect fun Double.pow(x: Double): Double` b^n Raises this value to the integer power n . See the other overload of `[pow]` for details.

`SinceKotlin("1.2")\npublic expect fun Double.pow(n: Int): Double` Returns the absolute value of this value. Special cases: $\text{NaN}.\text{absoluteValue}$ is NaN @see `abs`

`SinceKotlin("1.2")\npublic expect val Double.absoluteValue: Double` Returns the sign of this value: -1.0 if the value is negative, 0 if the value is zero, 1.0 if the value is positive. Special case: $\text{NaN}.\text{sign}$ is NaN

`SinceKotlin("1.2")\npublic expect val Double.sign: Double` Returns this value with the sign bit same as of the `[sign]` value. If `[sign]` is NaN the sign of the result is undefined.

`SinceKotlin("1.2")\npublic expect fun Double.withSign(sign: Double): Double` Returns this value with the sign bit same as of the `[sign]` value.

`SinceKotlin("1.2")\npublic expect fun Double.withSign(sign: Int): Double` Returns the ulp (unit in the last place) of this value. An ulp is a positive distance between this value and the next nearest `[Double]` value larger in magnitude. Special Cases: $\text{NaN}.\text{ulp}$ is NaN $x.\text{ulp}$ is $+\text{Inf}$ when x is $+\text{Inf}$ or $-\text{Inf}$ $0.0.\text{ulp}$ is `Double.MIN_VALUE`

`SinceKotlin("1.2")\npublic expect val Double.ulp: Double` Returns the `[Double]` value nearest to this value in direction of positive infinity.

`SinceKotlin("1.2")\npublic expect fun Double.nextUp(): Double` Returns the `[Double]` value nearest to this value in direction of negative infinity.

`SinceKotlin("1.2")\npublic expect fun Double.nextDown(): Double` Returns the `[Double]` value nearest to this value towards the value `[to]`. Special cases: $x.\text{nextTowards}(y)$ is NaN if either x or y are NaN $x.\text{nextTowards}(x) == x$

`SinceKotlin("1.2")\npublic expect fun Double.nextTowards(to: Double): Double` Rounds this `[Double]` value to the nearest integer and converts the result to `[Int]`. Ties are rounded towards positive infinity. Special cases: $x.\text{roundToInt}() == \text{Int}.\text{MAX_VALUE}$ when $x > \text{Int}.\text{MAX_VALUE}$ $x.\text{roundToInt}() == \text{Int}.\text{MIN_VALUE}$ when $x < \text{Int}.\text{MIN_VALUE}$ @throws `IllegalArgumentException` when this value is NaN

`SinceKotlin("1.2")\npublic expect fun Double.roundToInt(): Int` Rounds this `[Double]` value to the nearest integer and converts the result to `[Long]`. Ties are rounded towards positive infinity. Special cases: $x.\text{roundToLong}() == \text{Long}.\text{MAX_VALUE}$ when $x > \text{Long}.\text{MAX_VALUE}$ $x.\text{roundToLong}() == \text{Long}.\text{MIN_VALUE}$ when $x < \text{Long}.\text{MIN_VALUE}$ @throws `IllegalArgumentException` when this value is NaN

`SinceKotlin("1.2")\npublic expect fun Double.roundToLong(): Long` `endregion`

=====`Float Math`=====
 Computes the sine of the angle `[x]` given in radians. Special cases: $\sin(\text{NaN}|\pm\text{Inf}|\text{Inf})$ is NaN

`SinceKotlin("1.2")\npublic expect fun sin(x: Float): Float` Computes the cosine of the angle `[x]` given in radians. Special cases: $\cos(\text{NaN}|\pm\text{Inf}|\text{Inf})$ is NaN

`SinceKotlin("1.2")\npublic expect fun cos(x: Float): Float` Computes the tangent of the angle `[x]` given in radians. Special cases: $\tan(\text{NaN}|\pm\text{Inf}|\text{Inf})$ is NaN

`SinceKotlin("1.2")\npublic expect fun tan(x: Float): Float` Computes the arc sine of the value `[x]`; the returned value is an angle in the range from $-\text{PI}/2$ to $\text{PI}/2$ radians. Special cases: $\text{asin}(x)$ is NaN , when $\text{abs}(x) > 1$ or x is NaN

`SinceKotlin("1.2")\npublic expect fun asin(x: Float): Float` Computes the arc cosine of the value `[x]`; the returned value is an angle in the range from 0.0 to PI radians. Special cases: $\text{acos}(x)$ is NaN , when $\text{abs}(x) > 1$ or x is NaN

`SinceKotlin("1.2")\npublic expect fun acos(x: Float): Float` Computes the arc tangent of the value `[x]`; the returned value is an angle in the range from $-\text{PI}/2$ to $\text{PI}/2$ radians. Special cases: $\text{atan}(\text{NaN})$ is NaN

`SinceKotlin("1.2")\npublic expect fun atan(x: Float): Float` Returns the angle `theta` of the polar coordinates `(r, theta)` that correspond to the rectangular coordinates `(x, y)` by computing the arc tangent of the value `[y] / [x]`; the returned value is an angle in the range from $-\text{PI}$ to PI radians. Special cases: $\text{atan2}(0.0, 0.0)$ is 0.0 $\text{atan2}(0.0, x)$ is 0.0 for $x > 0$ and PI for $x < 0$ $\text{atan2}(-0.0, x)$ is -0.0

for $x > 0$ and $-\pi$ for $x < 0$. $\text{atan2}(y, +\infty)$ is 0.0 for $0 < y < +\infty$ and -0.0 for $-\infty < y < 0$. $\text{atan2}(y, -\infty)$ is π for $0 < y < +\infty$ and $-\pi$ for $-\infty < y < 0$. $\text{atan2}(y, 0.0)$ is $\pi/2$ for $y > 0$ and $-\pi/2$ for $y < 0$. $\text{atan2}(+\infty, x)$ is $\pi/2$ for finite x . $\text{atan2}(-\infty, x)$ is $-\pi/2$ for finite x . $\text{atan2}(\text{NaN}, x)$ and $\text{atan2}(y, \text{NaN})$ is NaN .

```
@SinceKotlin("1.2")\npublic expect fun atan2(y: Float, x: Float): Float\n\n * Computes the hyperbolic sine of the value [x].\n * Special cases:\n * - sinh(NaN) is NaN\n * - sinh(+Inf) is +Inf\n * - sinh(-Inf) is -Inf\n\n@SinceKotlin("1.2")\npublic expect fun sinh(x: Float): Float\n\n * Computes the hyperbolic cosine of the value [x].\n * Special cases:\n * - cosh(NaN) is NaN\n * - cosh(+Inf|-Inf) is +Inf\n\n@SinceKotlin("1.2")\npublic expect fun cosh(x: Float): Float\n\n * Computes the hyperbolic tangent of the value [x].\n * Special cases:\n * - tanh(NaN) is NaN\n * - tanh(+Inf) is 1.0\n * - tanh(-Inf) is -1.0\n\n@SinceKotlin("1.2")\npublic expect fun tanh(x: Float): Float\n\n * Computes the inverse hyperbolic sine of the value [x].\n * The returned value is `y` such that `sinh(y) == x`.\n * Special cases:\n * - asinh(NaN) is NaN\n * - asinh(+Inf) is +Inf\n * - asinh(-Inf) is -Inf\n\n@SinceKotlin("1.2")\npublic expect fun asinh(x: Float): Float\n\n * Computes the inverse hyperbolic cosine of the value [x].\n * The returned value is positive `y` such that `cosh(y) == x`.\n * Special cases:\n * - acosh(NaN) is NaN\n * - acosh(x) is NaN when `x < 1`\n * - acosh(+Inf) is +Inf\n\n@SinceKotlin("1.2")\npublic expect fun acosh(x: Float): Float\n\n * Computes the inverse hyperbolic tangent of the value [x].\n * The returned value is `y` such that `tanh(y) == x`.\n * Special cases:\n * - tanh(NaN) is NaN\n * - tanh(x) is NaN when `x > 1` or `x < -1`\n * - tanh(1.0) is +Inf\n * - tanh(-1.0) is -Inf\n\n@SinceKotlin("1.2")\npublic expect fun atanh(x: Float): Float\n\n * Computes `sqrt(x^2 + y^2)` without intermediate overflow or underflow.\n * Special cases:\n * - returns +Inf if any of arguments is infinite\n * - returns NaN if any of arguments is NaN and the other is not infinite\n\n@SinceKotlin("1.2")\npublic expect fun hypot(x: Float, y: Float): Float\n\n * Computes the positive square root of the value [x].\n * Special cases:\n * - sqrt(x) is NaN when `x < 0` or `x` is NaN\n\n@SinceKotlin("1.2")\npublic expect fun sqrt(x: Float): Float\n\n * Computes Euler's number `e` raised to the power of the value [x].\n * Special cases:\n * - exp(NaN) is NaN\n * - exp(+Inf) is +Inf\n * - exp(-Inf) is 0.0\n\n@SinceKotlin("1.2")\npublic expect fun exp(x: Float): Float\n\n * Computes `exp(x) - 1`.\n * This function can be implemented to produce more precise result for [x] near zero.\n * Special cases:\n * - expm1(NaN) is NaN\n * - expm1(+Inf) is +Inf\n * - expm1(-Inf) is -1.0\n * @see [exp] function.\n\n@SinceKotlin("1.2")\npublic expect fun expm1(x: Float): Float\n\n * Computes the logarithm of the value [x] to the given [base].\n * Special cases:\n * - log(x, b) is NaN if either `x` or `b` are NaN\n * - log(x, b) is NaN when `x < 0` or `b <= 0` or `b == 1.0`\n * - log(+Inf, +Inf) is NaN\n * - log(+Inf, b) is +Inf for `b > 1` and -Inf for `b < 1`\n * - log(0.0, b) is -Inf for `b > 1` and +Inf for `b > 1`\n * See also logarithm functions for common fixed bases: [ln], [log10] and [log2].\n\n@SinceKotlin("1.2")\npublic expect fun log(x: Float, base: Float): Float\n\n * Computes the natural logarithm (base `E`) of the value [x].\n * Special cases:\n * - ln(NaN) is NaN\n * - ln(x) is NaN when `x < 0.0`\n * - ln(+Inf) is +Inf\n * - ln(0.0) is -Inf\n\n@SinceKotlin("1.2")\npublic expect fun ln(x: Float): Float\n\n * Computes the common logarithm (base 10) of the value [x].\n * @see [ln] function for special cases.\n\n@SinceKotlin("1.2")\npublic expect fun log10(x: Float): Float\n\n * Computes the binary logarithm (base 2) of the value [x].\n * @see [ln] function for special cases.\n\n@SinceKotlin("1.2")\npublic expect fun log2(x: Float): Float\n\n * Computes `ln(x + 1)`.\n * This function can be implemented to produce more precise result for [x] near zero.\n * Special cases:\n * - ln1p(NaN) is NaN\n * - ln1p(x) is NaN where `x < -1.0`\n * - ln1p(-1.0) is -Inf\n * - ln1p(+Inf) is +Inf\n * @see [ln] function\n * @see [expm1] function\n\n@SinceKotlin("1.2")\npublic expect fun ln1p(x: Float): Float\n\n * Rounds the given value [x] to an integer towards positive infinity.\n * @return the smallest Float value that is greater than or equal to the given value [x] and is a mathematical integer.\n * Special
```

cases: x - $\text{ceil}(x)$ is x where x is NaN or $+\text{Inf}$ or $-\text{Inf}$ or already a mathematical integer.

```

* \n @SinceKotlin("1.2") \n public expect fun ceil(x: Float): Float \n \n * Rounds the given value [x] to an
integer towards negative infinity. \n \n * @return the largest Float value that is smaller than or equal to the given
value [x] and is a mathematical integer. \n \n * Special cases: \n \n * -  $\text{floor}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or
already a mathematical integer. \n \n * \n @SinceKotlin("1.2") \n public expect fun floor(x: Float):
Float \n \n * Rounds the given value [x] to an integer towards zero. \n \n * @return the value [x] having its
fractional part truncated. \n \n * Special cases: \n \n * -  $\text{truncate}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or
already a mathematical integer. \n \n * \n @SinceKotlin("1.2") \n public expect fun truncate(x: Float): Float \n \n *
Rounds the given value [x] towards the closest integer with ties rounded towards even integer. \n \n * Special
cases: \n \n * -  $\text{round}(x)$  is  $x$  where  $x$  is  $\text{NaN}$  or  $+\text{Inf}$  or  $-\text{Inf}$  or already a mathematical integer. \n
* \n @SinceKotlin("1.2") \n public expect fun round(x: Float): Float \n \n * Returns
the absolute value of the given value [x]. \n \n * Special cases: \n \n * -  $\text{abs}(\text{NaN})$  is  $\text{NaN}$  \n \n * @see
absoluteValue extension property for [Float] \n \n * \n @SinceKotlin("1.2") \n public expect fun abs(x: Float):
Float \n \n * Returns the sign of the given value [x]: \n \n * -  $-1.0$  if the value is negative, \n \n * - zero if the value
is zero, \n \n * -  $1.0$  if the value is positive \n \n * Special case: \n \n * -  $\text{sign}(\text{NaN})$  is  $\text{NaN}$  \n
* \n @SinceKotlin("1.2") \n public expect fun sign(x: Float): Float \n \n * Returns the smaller of two
values. \n \n * If either value is  $\text{NaN}$ , then the result is  $\text{NaN}$ . \n \n * \n @SinceKotlin("1.2") \n public expect fun
min(a: Float, b: Float): Float \n \n * Returns the greater of two values. \n \n * If either value is  $\text{NaN}$ , then the
result is  $\text{NaN}$ . \n \n * \n @SinceKotlin("1.2") \n public expect fun max(a: Float, b: Float): Float \n \n * Returns
the cube root of [x]. For any  $x$ ,  $\text{cbrt}(-x) == -\text{cbrt}(x)$ ; \n \n * that is, the cube root of a negative
value is the negative of the cube root \n \n * of that value's magnitude. Special cases: \n \n * Special cases: \n \n * - If the
argument is  $\text{NaN}$ , then the result is  $\text{NaN}$ . \n \n * - If the argument is infinite, then the result is an infinity with the
same sign as the argument. \n \n * - If the argument is zero, then the result is a zero with the same sign as the
argument. \n \n * \n @SinceKotlin("1.8") \n @WasExperimental(ExperimentalStdlibApi::class) \n public expect fun
cbrt(x: Float): Float \n \n // extensions \n \n * \n @SinceKotlin("1.2") \n public expect fun Float.pow(x: Float): Float \n
* \n @SinceKotlin("1.2") \n public expect fun Float.pow(n: Int): Float \n \n * Returns the absolute
value of this value. \n \n * Special cases: \n \n * -  $\text{NaN.absoluteValue}$  is  $\text{NaN}$  \n \n * @see abs function \n
* \n @SinceKotlin("1.2") \n public expect val Float.absoluteValue: Float \n \n * Returns the sign of this value: \n
* \n * -  $-1.0$  if the value is negative, \n \n * - zero if the value is zero, \n \n * -  $1.0$  if the value is positive \n
* \n * Special
case: \n \n * -  $\text{NaN.sign}$  is  $\text{NaN}$  \n \n * \n @SinceKotlin("1.2") \n public expect val Float.sign: Float \n \n * Returns
this value with the sign bit same as of the [sign] value. \n \n * If [sign] is  $\text{NaN}$  the sign of the result is undefined. \n
* \n @SinceKotlin("1.2") \n public expect fun Float.withSign(sign: Float): Float \n \n * Returns this value with
the sign bit same as of the [sign] value. \n \n * \n @SinceKotlin("1.2") \n public expect fun Float.withSign(sign: Int):
Float \n \n * Rounds this [Float] value to the
nearest integer and converts the result to [Int]. \n \n * Ties are rounded towards positive infinity. \n \n * Special
cases: \n \n * -  $x.\text{roundToInt}() == \text{Int.MAX\_VALUE}$  when  $x > \text{Int.MAX\_VALUE}$  \n \n * -  $x.\text{roundToInt}() ==
\text{Int.MIN\_VALUE}$  when  $x < \text{Int.MIN\_VALUE}$  \n \n * @throws IllegalArgumentException when this value is
 $\text{NaN}$  \n \n * \n @SinceKotlin("1.2") \n public expect fun Float.roundToInt(): Int \n \n * Rounds this [Float] value
to the nearest integer and converts the result to [Long]. \n \n * Ties are rounded towards positive infinity. \n \n *
Special cases: \n \n * -  $x.\text{roundToLong}() == \text{Long.MAX\_VALUE}$  when  $x > \text{Long.MAX\_VALUE}$  \n \n * -
 $x.\text{roundToLong}() == \text{Long.MIN\_VALUE}$  when  $x < \text{Long.MIN\_VALUE}$  \n \n * @throws
IllegalArgumentException when this value is  $\text{NaN}$  \n \n * \n @SinceKotlin("1.2") \n public expect fun
Float.roundToLong(): Long \n \n // endregion \n \n // region ===== Integer Math
===== \n \n * \n @SinceKotlin("1.2") \n public expect fun Float.absoluteValue: Float \n \n * Returns the absolute value of the given value

```

[n].n * Special cases: - `abs(Int.MIN_VALUE)` is `Int.MIN_VALUE` due to an overflow\n * @see absoluteValue extension property for [Int]\n * SinceKotlin("1.2")\npublic expect fun abs(n: Int): Int\n/n/**\n * Returns the smaller of two values.\n * SinceKotlin("1.2")\npublic expect fun min(a: Int, b: Int): Int\n/n/**\n * Returns the greater of two values.\n * SinceKotlin("1.2")\npublic expect fun max(a: Int, b: Int): Int\n/n/**\n * Returns the absolute value of this value.\n * Special cases: - `Int.MIN_VALUE.absoluteValue` is `Int.MIN_VALUE` due to an overflow\n * @see abs function\n * SinceKotlin("1.2")\npublic expect val Int.absoluteValue: Int\n/n/**\n * Returns the sign of this value: - `1` if the value is negative,\n * - `0` if the value is zero,\n * - `1` if the value is positive\n * SinceKotlin("1.2")\npublic expect val Int.sign: Int\n/n\n/n/**\n * Returns the absolute value of the given value [n].n * Special cases: - `abs(Long.MIN_VALUE)` is `Long.MIN_VALUE` due to an overflow\n * @see absoluteValue extension property for [Long]\n * SinceKotlin("1.2")\npublic expect fun abs(n: Long): Long\n/n/**\n * Returns the smaller of two values.\n * SinceKotlin("1.2")\npublic expect fun min(a: Long, b: Long): Long\n/n/**\n * Returns the greater of two values.\n * SinceKotlin("1.2")\npublic expect fun max(a: Long, b: Long): Long\n/n/**\n * Returns the absolute value of this value.\n * Special cases: - `Long.MIN_VALUE.absoluteValue` is `Long.MIN_VALUE` due to an overflow\n * @see abs function\n * SinceKotlin("1.2")\npublic expect val Long.absoluteValue: Long\n/n/**\n * Returns the sign of this value: - `1` if the value is negative,\n * - `0` if the value is zero,\n * - `1` if the value is positive\n * SinceKotlin("1.2")\npublic expect val Long.sign: Int\n/n\n// endregion\n", "*/\n * Copyright 2010-2022 JetBrains s.r.o. and Kotlin Programming Language

contributors.\n * Use of this source code is governed by the Apache 2.0 license that can be found in the license/LICENSE.txt file.\n *\npackage kotlin.js\n/**\n * Exposes the JavaScript [Math object](https://developer.mozilla.org/en/docs/Web/JavaScript/Reference/Global_Objects/Math) to Kotlin.\n *\n@PublishedApi\n@JsName("Math")\ninternal external object JsMath {\n val LN2: Double\n fun abs(value: Double): Double\n fun acos(value: Double): Double\n fun asin(value: Double): Double\n fun atan(value: Double): Double\n fun atan2(y: Double, x: Double): Double\n fun cos(value: Double): Double\n fun sin(value: Double): Double\n fun exp(value: Double): Double\n fun max(vararg values: Int): Int\n fun max(vararg values: Float): Float\n fun max(vararg values: Double): Double\n fun min(vararg values: Int): Int\n fun min(vararg values: Float): Float\n fun min(vararg values: Double): Double\n fun sqrt(value: Double): Double\n fun tan(value: Double): Double\n fun log(value: Double): Double\n fun cbrt(value: Double): Double\n fun pow(base: Double, exp: Double): Double\n fun round(value: Number): Double\n fun floor(value: Number): Double\n fun ceil(value: Number): Double\n}\n\ninternal const val defineTaylorNBound = \"\"\n var epsilon = 2.220446049250313E-16;\n var taylor_2_bound = Math.sqrt(epsilon);\n var taylor_n_bound = Math.sqrt(taylor_2_bound);\n\ninternal const val defineUpperTaylor2Bound = \"\"\n\n\$defineTaylorNBound\n var upper_taylor_2_bound = 1/taylor_2_bound;\n\ninternal const val defineUpperTaylorNBound = \"\"\n\n\$defineUpperTaylor2Bound\n var upper_taylor_n_bound = 1/taylor_n_bound;\n\n\"\", \"names\": [], \"mappings\": \"AAWC,CAXA,yB;EACG,IAAI,OAAO,MAAO,KAAI,UAAW,IAAG,MAAM,IAA1C,C;IACI,MAAM,CAAC,QAAD,EAAW,CAAC,SAAD,CAAX,EAAwB,OAAxB,C;SAEL,IAAI,OAAO,OAAQ,KAAI,QAAvB,C;IACD,OAAO,CAAC,MAAM,QAAP,C;;IAGP,IAAI,OAAQ,GAAE,E;IACd,OAAO,CAAC,IAAI,OAAL,C;;CAEd,CAAC,IAAD,EAAO,kB;EACJ,IAAI,IAAI,M;ECPU;;;IAAtB,MAAM,eAAgB,GAAE,a;IACpB,OAAoD,CAA5C,KAAK,QAAQ,CAAC,CAAD,CAAI,IAAG,CAAE,YAAW,SAAW,KAAG,CAAC,OAAQ,KAAI,c;G;EAGxE,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAE,YAAW,SAAU,IAAG,CAAC,OAAQ,KAAI,c;G;EAGID,MAAM,aAAc,GAAE,a;IACIB,OAAO,CAAE,YAAW,U;G;EAGxB,MAAM,YAAa,GAAE,a;IACjB,OAAO,CAAE,YAAW,WAAY,IAAG,CAAC,OAAQ,KAAI,W;G;EAGpD,MAAM,WAAY,GAAE,a;IACkB,OAAO,CAAE,YAAW,U;G;EAGxB,MAAM,aAAc,GAAE,a;IACIB,OAAO,CAAE,YAAW,Y;G;EAGxB,MAAM,cAAe,GAAE,a;IACnB,OAAO,CAAE,YAAW,Y;G;EAGxB,MAAM,YAAa,GAAE,a;IACjB,OAAO,KAAK,QAAQ,CAAC,CAAD,CAAI,IAAG,CAAC,OAAQ,KAAI,W;G;EAG5C,MAAM,QAAS,GAAE,a;IACb,OAAO,KAAK,QAAQ,CAAC,CAAD,CAAI,IAAG,CAAC,CAAC,O;G;EAGjC,MAAM,WAAY,GAAE,a;IACkB,OAAO,KAAK,QAA

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,W;K;qEAOJ,yB;MAAA,2B;MAAA,6B;QAC2E,YAAa,UAAU,IAAV,EAAGB,KAAbB,C;QAJEvE,Q;QAAA,OA
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,yC;+BCVA,uC;+BCAA,sC;;aC+EgD,e;gCC0E/E,+B;+BAIW,sC;gCCyxCc,+B;0BAHvB,kC;uBA96BO,gC;yBAq
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B,C;uGAYA,yB;MAAA,sD;MAAA,mC;QASI,OAA Y,UAAL,SAAK,EAAU,KA AV,C;O;KAThB,C;iFAYA,gC;M
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C;YAAe,4BAAO,OAqXI,OArXJ,C;YAAP,8B;;UACqB,kBAAvB,eAAa,iBAAO,CAAP,IAAb,C;UAA+B,sBAoXI
B,OApxkB,C;UAA5C,arBltSO,W;UqBmtSP,kBAmX0B,O;UAIXZ,OAz+KE,YAAR,iBAAQ,C;UAY+KF,mB;UA
AA,kB;UAAA,kB;UAAAd,0D;YACI,cAiX+B,SAjXjB,CAAU,KAAV,EAAiB,WAAjB,EAA8B,sBAAK,KAAL,CA
A9B,C;YACd,MAAO,WAAI,WAAJ,C;;UAEX,4BAAO,M;;;QA8WP,gC;O;KAjBJ,C;+FAoBA,yB;MA9WA,gD;M
AAA,gE;MAx+KI,0D;MA5ILJ,gD;QAIbW,6B;;UA5WO,gC;UAHd,IAAI,mBAAJ,C;YAAe,4BAAO,OA+WI,OA/
WJ,C;YAAP,8B;;UACqB,kBAAvB,eAAa,iBAAO,CAAP,IAAb,C;UAA+B,sBA8WIB,OA9WkB,C;UAA5C,arB5u
SO,W;UqB6uSP,kBA6W0B,O;UA5WZ,OA3/KE,YAAR,iBAAQ,C;UA2/KF,mB;UAAA,kB;UAAA,kB;UAAAd,0D;
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I,WAAJ,C;;UAEX,4BAAO,M;;;QAwWP,gC;O;KAjBJ,C;mFAoBA,yB;MAAA,wB;MAAA,sC;QAUoB,Q;QADhB
,UAAgB,W;QACA,2B;QAAhB,OAAGB,cAAhB,C;UAAgB,yB;UACZ,MpC3mTiD,SoC2mTjD,GpC3mT2D,KAA
K,GoC2mTzD,SAAS,OAAT,CpC3mToE,KAAX,IAAf,C;;QoC6mTrD,OAAO,G;O;KAbX,C;mFAGBA,yB;MAAA
,wB;MAAA,sC;QAUoB,Q;QADhB,UAAgB,W;QACA,2B;QAAhB,OAAGB,cAAhB,C;UAAgB,yB;UACZ,MpC3n
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B,G;MACF,2B;MAAhB,OAAGB,cAAhB,C;QAAGB,yB;QACZ,OAAO,SAAS,OAAT,C;;MAEX,OAAO,G;K;+FA
GX,+B;MAUoB,Q;MADhB,UAAkB,G;MACF,2B;MAAhB,OAAGB,cAAhB,C;QAAGB,yB;QACZ,OAAO,SAAS,
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CF,2B;MAAhB,OAAGB,cAAhB,C;QAAGB,yB;QACZ,OAAO,SAAS,OAAT,C;;MAEX,OAAO,G;K;kFAGX,+B;

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;;MAEX,OAAO,G;K;mFAGX,+B;MAYoB,Q;MADhB,UAAoB,C;MACJ,2B;MAAhB,OAAgB,cAAhB,C;QAAgB,
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,YAAO,SAAS,OAAT,CAAP,I;;MAEJ,OAAO,G;K;mFAGX,+B;MAYoB,Q;MADhB,UAAe,C;MACC,2B;MAAhB
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Bi7TH,KAyDkB,OpB1+Tf,C;MoB2+Td,WAAW,iBAaA,IAAb,C;MACX,aAAU,CAAV,MAAkB,IAAIB,M;QACI,
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C;K;wDACZ,Y;MAAyB,oBAAQ,kBAAM,O;K;yDACvC,Y;MAAwD,Q;MAA9B,IAAI,aAAQ,kBAAM,OAAIB,C
;QAAA,OAAwB,mBAAM,iBAAN,EAAM,yBAAN,O;;QAAoB,MAAM,2BAAYB,UAAF,WAAvB,C;K;;IAJhF,kC
;MACmD,iD;K;IAOpB,gC;MAAC,wB;K;;IAEhC,+B;MAC8C,MAAM,mC;K;IAEpD,8C;MAEL,IAAI,qBAAJ,C;Q
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AEzC,c;;MAHJ,wB;MAKA,kBAAkB,K;MACIB,iBAAiB,W;MACjB,OAAO,S;K;IAIa,sB;MAAC,U;K;iCACrB,iB
;MACI,OAAO,mCAAsB,WAAK,KAAAM,E;K;mCAG5C,Y;MACI,OAAO,M;K;mCAGX,Y;MACI,OAAUc,oBAA
nB,UAAV,IAAH,EAaA,CAAmB,C;K;0CAG3C,iB;MACI,OAAU,IAAI,EAAP,GAAY,K;K;kCAGvB,Y;MAEL,OA
AO,M;K;;+DAIf,gB;MAEL,YAAY,MAAY,IAAK,OAAjB,C;MACZ,sBAAU,IAAV,a;QACI,UAAU,KAAK,CAAL
,C;QACV,IAAI,oBAAJ,C;UACI,MAAM,CAAN,IAAW,EAAS,MAAM,MAAK,GAAL,C;;UAE1B,MAAM,CAAN
,IAAW,G;;MAGnB,OAAO,EAAS,OAAO,OAAM,EAAN,EAAGB,KAAhB,C;K;IAG3B,2B;MAMW,WAAO,S;M
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,C;;YAE1B,MAAM,CAAN,IAAW,G;;QA4Bf,OAzBG,EAAS,OAAO,OAAM,EAAN,EAAGB,KAAhB,C;;QA2Bn
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X,M;UAFX,YAAU,IAAQ,CAAH,GAAG,C;UACI,SAAJ,KAAI,O;UAAtB,aAAU,CAAV,kB;YACI,OAAO,aAAP,

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P,C;K;IID4zDhB,2B;MAQI,IAAI,mBAAO,CAAX,C;QAAC,UAAU,SAAV,C;K;IAGIB,wC;MAQI,IAAI,mBAAO,
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AoB,OAAPB,C;MACvB,KAAT,QAAS,C;K;IAGb,gD;MAagC,yB;QAAA,YAAiB,C;MAAG,uB;QAAA,UAAe,gB;
MAC/D,oCAAA,2BAAkB,SAAIB,EAA6B,OAA7B,EAAsC,gBAAtC,C;MACb,eAAoB,SAAY,UAAS,SAAT,EA
AoB,OAAPB,C;MACvB,KAAT,QAAS,C;K;IAGb,gD;MAaiC,yB;QAAA,YAAiB,C;MAAG,uB;QAAA,UAAe,gB;
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B,C;MACvB,KAAT,QAAS,C;K;IAGb,gD;MAamC,yB;QAAA,YAAiB,C;MAAG,uB;QAAA,UAAe,gB;MACIE,o
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,Ukd3/DC,C;K;iFID8/DhB,iC;MkD9/DgB,elDqgED,UkdrgEC,C;K;iFIDwgEhB,iC;MkDxgEgB,elD+gED,UkD/gE

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G/B,gCAAgC,gBAC5B,CAD4B,EACzB,CADyB,EACtB,CADsB,EACnB,CADmB,EACHb,CADgB,EACb,CADa,
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T,gBAAR,iBAAQ,C;;MA7/GT,U;MAAA,S;QAAA,SAAsC,sBoChTtB,KpCgTsB,C;;QoChTb,MAAM,8BAA0B,iC
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;wDAC/B,Y;MAAkC,iEAAc,IAAd,C;K;sDACIC,iB;MAA4C,+DAAY,IAAZ,EAAkB,KAAIB,C;K;;IAIB5C,8E;M
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CIE,mB;MAAmD,kCAAc,OAAd,C;K;iEAEnD,mB;MAAiD,gCAAY,OAAZ,C;K;;yCAIrD,Y;MACl,YAAQ,Q;K;I
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AmC,OAAO,I;;MAA7D,mBAAmB,I;MACnB,IAAI,6BAAJ,C;QACI,YAAgC,Y;QAChC,IAAI,aAAS,gBAAO,KAAM,IAAb,EAakB,GAAIB,CAAb,C;U9BzDR,O8B0D6B,iB9B1DhB,C8B0D4B,Q9B1D5B,C;U8B2DD,6B;UACA,OAAO,KAAM,M;;UAEb,OAAO,I;;QAGX,YAAuC,Y;QACvC,8BAAC,KAAd,iB;UACI,cAAY,MAAM,KAAN,C;UACZ,IAAI,aAAS,gBAAO,GAAP,EAAY,OAAM,IAAI,CAAb,C;YACI,IAAI,KAAM,OAAN,KAAC,CAAI,CAI,CAI,C;CACU,KAAN,UAA2B,C;c9BtE/C,O8BwEqC,iB9BxExB,C8BwEoC,Q9BxEpC,C;;c8B2Ea,KAAY,QAAO,KAAP,EAAC,CAAd,C;;YAEtB,6B;YAEA,OAAO,OAAM,M;;;MAIzB,OAAO,I;K;0CAGX,Y;MACI,oBAAa,kB;MACb,YAAO,C;K;mDAGX,e;MAAyC,uBAAS,GAAT,S;K;8CAEzC,e;MAA+B,Q;MAAA,+BAAS,GAAT,8B;K;+CAE/B,e;MAC2E,IAApD,I;MAAA,oCAAsB,aAAS,qBAAY,GAAZ,CAA/B,C;MAAA,iB;QAAoD,OAAO,I;;MAA9E,mBAAmB,I;MACnB,IAAI,6BAAJ,C;QACI,YAAgC,Y;QAChC,IAAI,aAAS,gBAAO,KAAM,IAAb,EAakB,GAAIB,CAAb,C;UACI,OAAO,K;;UAEP,OAAO,I;;QAGX,YAAuC,Y;QACvC,OAAa,wBAAN,KAAM,EAaiB,GAAjB,C;;K;uDAlrB,0B;MACI,sB;;Q1FsoCY,Q;QAAhB,iD;UAAgB,cAAhB,e;UAAsB,I0FtoCK,aAAS,gB1FsoCA,00FtoCa,IAAb,M1FsoCd,C;YAAwB,qBAAO,O;YAAP,uB;;QAC9C,qBAAO,I;;M0FvoCH,yB;K;IAIO,8E;MAAA,wD;MACH,aAAY,E;MAEZ,YAA0B,MAAa,MAAK,qCAAL,C;MACvC,gBAAe,E;MAEf,oBAA4B,I;MAC5B,eAAc,K;MACd,iBAAGB,E;MACHB,iBAAGC,I;K;yEAER,C,Y;MACI,IAAI,6BAAwB,YAA5B,C;QACI,gBAAqB,iBAAGD,O;QAC1E,IAAI,4DAAC,SAAI,CAI,C;UACI,OAAO,C;;MAGf,IAAI,yDAAa,SAAK,OAATB,C;QACI,oBAAe,2CAAW,UAAK,aAAL,CAAX,C;QACf,eAAU,iC;QACV,iBAAY,C;QACZ,OAAO,C;;QAEp,oBAAe,I;QACf,OAAO,C;;K;mEAI,f,Y;MACI,IAAI,eAAS,EAAb,C;QACI,AAAQ,oB;MACZ,OAAO,eAAS,C;K;gEAGpB,Y;MAEoB,Q;MADhB,IAAI,CAAC,cAAL,C;QAAgB,MAAM,6B;MACN,IAAI,YAAJ,C;QACZ,yBAAGD,cAArD,C;;QAEa,OAAb,iB;;MAHJ,oB;MAKA,iBAaiB,S;MACjB,AAAQ,E;MACR,OAAO,S;K;KEAGX,Y;M3E/CR,I2EgDyB,c3EhDrB,QAAJ,C;QACI,cAhByB,0B;QAIzB,MAAM,6BAAsB,AAQ,WAA9B,C;;M2E+CE,6BAAYB,cAAO,6BAAY,IAAnB,C;MACzB,iBAAY,I;MAEZ,uC;K;;6CAtdZ,Y;MAEI,2D;K;4DAyDJ,oB;MACI,mBAAmB,kBAAW,QAAX,C;MACnB,OAAW,iBAaiB,SAArB,GAAgC,IAAhC,GAA0C,Y;K;;;wCCtKrD,Y;MACI,AAAgB,MAAM,OAAT,CAAI,IAAJ,C;MAEb,OAAO,KAAP,IAAgB,C;M/BXpB,O+BYqB,M/BZR,C+BYgB,K/BZhB,C;M+BaT,OAAO,M;K;;ICNuB,qC;MAAC,kC;MAEnC,oBAakC,kB;MACIC,sBAAYB,C;K;yEAHU,Y;MAAA,8B;K;yFAGnC,Y;MAAA,0B;K,OAAA,gB;MAAA,0B;K;iDAWA,e;MACI,IAAI,0BAAJ,C;QAAoB,OAAO,K;MAC3B,OAAO,kBAAW,GAAAX,MAAoB,S;K;4CAG/B,e;MACI,IAAI,0BAAJ,C;QAAoB,OAAO,I;MAC3B,YAAy,kBAAW,GAAAX,C;MACZ,OAAW,UAAU,SAArB,GAAgC,KAAhC,GAA2D,I;K;8CAI/D,sB;M7EVA,IAAI,E6EWQ,uB7EXR,CAAJ,C;QACI,cAda,qB;QAEb,MAAM,gCAAYB,AAQ,WAAjC,C;;M6EUN,eAAe,kBAAW,GAAAX,C;MACf,kBAAW,GAAAX,IAAkB,K;MAEIB,IAAI,aAAa,SAAjB,C;QACI,6B;QAEA,OAAO,I;;QAGP,OAAO,Q;;K;+CAIf,e;MACI,IAAI,0BAAJ,C;QAAoB,OAAO,I;MAC3B,YAAy,kBAAW,GAAAX,C;MACZ,IAAI,UAAU,SAAd,C;QhCnDJ,OgCoDyB,iBhCpDZ,CgCoDwB,GhCpDxB,C;QgCqDL,6B;QAEA,OAAO,K;;QAGP,OAAO,I;;K;wCAKf,Y;MACI,oBAAa,kB;MACb,YAAO,C;K;IAKA,0E;MAAA,oD;MACH,cAAkC,MAAa,MAAK,mCAAL,C;MAC/C,kBAA4B,qBAAL,WAAK,C;MAC5B,iBAA+B,I;K;iEAE/B,Y;MAAkC,OAAA,eAAS,U;K;8DAE3C,Y;MAIuB,gB;MAHnB,UAAU,eAAS,O;MACnB,iBAAU,G;MAES,+E;MAAnB,OAAO,iD;K;gEAGX,Y;MAEkC,UAA9B,M;MAAA,oC;MAA8B,YAAa,c;M7EchD,uB;MAEP,IAfoB,KAehB,QAaj,C;QACI,cAhByB,0B;QAIzB,MAAM,6BAAsB,AAQ,WAA9B,C;;QAEEN,sBAnBgB,K;;M6Ede,oBAAO,sFAAP,C;K;;2CAjBnC,Y;MACI,yD;K;IAqBkD,0F;MAAA,8B;MAAA,oD;K;kHAC9B,Y;MAAQ,uB;K;oHACN,Y;MAAQ,6CAuB,gBAAvB,C;K;2EAE9B,oB;MAAwC,OAAA,2BAAuB,aAAl,gBAAJ,EAAS,QAAT,C;K;qEAE/D,Y;MAA+B,OAAA,mCAAY,uBAAC,IAAd,C;K;qEAC3C,Y;MAAkC,OAAAm,CAAY,uBAAC,IAAd,C;K;mEAC9C,iB;MAA4C,OAAA,mCAAY,qBAAY,IAAZ,EAakB,KAAIB,C;K;;gDAR5D,e;MAAsD,iE;K;;MCItd,sBAOsC,I;MA6CtC,yB;MAOA,4BAakC,K;;IArIE,sD;MAZpC,oB;MAYyD,0CAAqC,GAArC,EAA0C,KAA1C,C;MACrD,oBAAuC,I;MACvC,oBAAuC,I;K;wDAEvC,oB;MACI,WAAmB,iB;MACnB,OAAa,mEAAS,QAAT,C;K;;IAIrB,wC;MAAA,oB;MAA+B,8C;K;IAE3B,sD;MAAA,oB;MACI,cACsC,I;MAEtC,cACsC,I;MAGIc,cAAO,iC;K;6DAIX,Y;MACI,OAAO,gBAAS,I;K;0DAGpB,Y;MAEI,IAAI,CAAC,cAAL,C;QAAgB,MAAM,6B;MAEtB,cAAc,0B;MACd,cAAO,O;MACa,gBAAb,OAAQ,a;;MAAf,c3E0DS,S2E1D0B,KAAO,iC3E0DzC,GAAqB,SAArB,GAA+B,I;M2EzD1B,OAAO,O;K;4DAGX,Y;M9EwBR,IAAI,E8EvBc,eAAQ,I9EuBtB,CAAJ,C;QACI,cAdW,e;QAEX,MAAM,6BAAsB,AAQ,WAA9B,C;;M8ExBE,WAAc,iB;MAGP,oCAAP,0BAAO,C;MACP,gCAAI,cAAO,0BAAO,IAAd,C;MAEJ,cAAO,I;K;;iDAIf,mB;MAAyD,MAAM,qCAA8B,iCAA9B,C;K;6CAC/D,Y;MACI,WAAmB,Q;K;6DAGvB,mB;MAAgE,OAAA,WAAmB,uBAAC,OAAd,C;K;gDAEnF,Y;MA

AwE,qD;K;2DAExE,mB;MACI,qB;MACA,IAAI,iBAAS,OAAT,CAAJ,C;QACI,WAAmB,cAAO,OAAQ,IAAf,C;
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K;;iDAa7D,qB;M9ErBA,IAAI,E8E0BM,0BAAQ,IAAR,IAAgB,0BAAQ,I9E1B9B,CAAJ,C;QACI,cAdW,e;QAEX,
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,0B;UAIbZb,MAAM,6BAAsB,SAAQ,WAA9B,C;;UAEN,sBAnBgB,K;;Q8EkBZ,+B;QAEA,yBAAO,K;QACP,yB
AAO,K;QAEp,qBAAa,S;QACb,qBAAa,S;;K;+CAIrB,qB;MAII,IAAI,SAAK,aAAL,KAAc,SAaIB,C;QAEI,sBAA
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ACP,yBAAO,I;K;oCA8CX,Y;MAEI,qB;MACA,4BAAa,I;MACb,OAAO,I;K;oCAGX,Y;MACI,qB;MACA,kBAAI
,Q;MACJ,sBAAO,I;K;gDASX,e;MAAmD,OAAA,kBAAI,mBAA Y,GAAZ,C;K;kDAEvD,iB;MACyC,IAAR,I;MA
AA,0B;MAAA,iB;QAAQ,OAAO,K;;MAA5C,WAA6B,I;;QAEzB,IAAI,OAAA,IAAK,MAAL,EAAc,KAAd,CAAJ
,C;UACI,OAAO,I;;QAEX,OAAO,cAAA,IAAK,aAAL,C;;MACF,iBAAS,mBAAT,C;MACT,OAAO,K;K;6CAIX,
Y;MAAoF,uC;K;wCAEpF,e;MAAmD,Q;MAAJ,QAAl,OAAJ,kBAAI,WAAI,GA AJ,CAAJ,6B;K;0CAE/C,sB;MA
CI,qB;MAEA,UAAU,kBAAI,WAAI,GA AJ,C;MACd,IAAI,OAAO,IAAX,C;QACI,eAAe,mCAAW,GAAX,EAAG
B,KAAb,C;QACf,kBAAI,aAAI,GA AJ,EAAS,QAAT,C;QACK,wBAAT,QAAS,C;QACT,OAAO,I;;QAEp,OAA
O,GA AI,gBAAS,KAAT,C;;K;2CAInB,e;MACI,qB;MAEA,YAA Y,kBAAI,cAAO,GAAP,C;MACHb,IAAI,SAAS,I
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AI,K;K;6CAE1C,Y;MACI,IAAI,yBAAJ,C;QAAgB,MAAM,oC;K;;IAng1B,mC;MAAA,uD;MAGuB,qB;MA9J3B,
yB;MA+JQ,sBAAM,gB;MAJV,Y;K;IAOA,iD;MAAA,uD;MAAoD,qB;MAIKxD,yB;MAoKc,Q;MAAN,sBAAM,+
D;MAFV,Y;K;IAKA,kE;MAAA,uD;MAQ8D,eAAM,eAAN,EAAuB,UAAvB,Q;MA/KIE,yB;MAGLQ,sBAAM,gB
;MATV,Y;K;IAYA,sD;MAAA,uD;MAA2C,qBAAK,eAAL,EAA sB,GAAtB,Q;MAA3C,Y;K;IAEA,+C;MAAA,uD
;MAG2C,qB;MAxL/C,yB;MAYLQ,sBAAM,gB;MACN,KA AK,gBAAO,QAAP,C;MALT,Y;K;IA6EJ,kC;MAKwD
,gBAA7C,qBAAYb,eAAzB,C;MAAqD,wB;MAA5D,O3EjMO,S;K;;oC4EvCP,Y;MAEK,Q;MAA8B,CAA9B,2EA
A8B,S;MAC/B,OAAO,I;K;6CAGX,Y;MAA+C,gBAAI,iB;K;;IAhCnD,wC;MAAA,uD;MAAmD,eAAM,GAAN,Q;
MAPvD,yB;MAOI,Y;K;IAEA,qC;MAAA,uD;MAGuB,eAAM,oBAAN,Q;MAZ3B,yB;MASI,Y;K;IAKA,+C;MAA
A,uD;MAG8C,eAAM,oBAAN,Q;MAjBID,yB;MAKbQ,qBAAO,QAAP,C;MAJJ,Y;K;IAOA,kE;MAAA,uD;MAQ8
D,eAAM,qBAAsB,eAAtB,EAAuC,UAAvC,CAAN,Q;MA7BIE,yB;MAqBI,Y;K;IAUA,sD;MAAA,uD;MAA2C,qB
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vD,O5EoBO,S;K;;;kF6EzEX,uB;MAQI,OAAO,O;K;ICXX,sB;K;mCACI,Y;MACI,mBAAM,IAAN,C;K;2CAGJ,
mB;MACI,mBAAM,OAAN,C;MACA,c;K;iCAKJ,Y;K;;IAKuB,oC;MAA8B,qB;MAA7B,gC;K;2CACxB,mB;MA
EI,oBA+DyC,OA/Dd,OA+Dc,C;MA9DzC,iBAAa,OAAM,aAAN,C;K;;IAIrB,8B;MAEoC,qB;K;iDAChC,mB;MA
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,C;K;;IAIhB,0B;MAEqC,qB;MACjC,cAAa,E;K;6CAEb,mB;MACI,eAoCyC,OApCxB,OAoCwB,C;K;qCAjC7C,Y
;MACI,cAAS,E;K;;IAIjB,sC;MAE4C,yB;K;yDACxC,mB;MACI,QA wByC,OAxB1B,OA wB0B,C;MAvBzC,QAA
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,C;;MoEjLzE,4BAAU,C;K;iDAGd,Y;MACI,OAAQ,KAAl,WAAJ,C;MACR,cAAS,E;K;;IAWjB,yB;MACiD,cAA
a,KAAb,C;K;IAEjD,mB;MAEI,MAAO,U;K;IAGX,4B;MAEI,MAAO,iBAAQ,OAAR,C;K;IAGX,wB;MAEI,MAA
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CAA9B,C;K;ICIGID,mD;MACI,0B;MASA,gBAA2B,a;K;2FAFvB,Y;MAAQ,OAAA,eAAS,Q;K;oDAIrB,kB;MA
CI,UAAU,IAAK,S;MAEX,YAAQ,2CAAR,C;QACI,gBAAc,MAAO,M;WAEzB,YAAQ,yBAAR,C;QACI,gBAAc,
yC;QACd,eAAS,oBAAW,MAAX,C;;QAEI,MAAM,6BAAsB,iBAAtB,C;K;4CAItB,Y;MAOW,Q;MALP,IAAI,kB
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;WACTB,0C;QAA4B,MAAM,MAAO,U;;QACjC,a;MAHZ,W;K;;IA7BJ,gD;MAAA,0D;MACyD,6BAAK,QAAL,E
AAe,2CAAF,C;MADzD,Y;K;;;ICRA,2C;MAAA,+D;MAAuB,iC;MAF3B,iC;MAEI,Y;K;IACA,sD;MAAA,+D;M
AAuC,6BAAM,OAAN,Q;MAH3C,iC;MAGI,Y;K;IACA,6D;MAAA,+D;MAAmD,kCAAM,OAAN,EAAe,KA Af,
C;MAJvD,iC;MAII,Y;K;IACA,oD;MAAA,+D;MAAiC,6BAAM,KAAN,Q;MALrC,iC;MAKI,Y;K;I1C4CJ,yE;MA
SI,sC;MAAA,4C;K;IATJ,iGAWY,Y;MAAQ,2B;KAXpB,E;IAAA,0DAaQ,kB;MACI,wBAAW,MAAX,C;K;IAdZ,

sF;I2C5C2E,0C;M5CkKhE,Q;MADP,e4ChKA,M5CgKA,C;MACO,Q4CjKP,M5CiKO,+D;M4ChKX,W;K;+FCuH
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A,sC;QAOyD,OAAK,SAAL,SAAK,EAAY,QAAZ,C;O;KAP9D,C;8EASA,yB;MAAA,6C;MAAA,wC;QAWkE,O
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K;ICCO,6C;MAAA,8B;MAAS,uB;K;8FACIC,Y;MAAQ,OAAA,gBAAY,O;K;mDAE3C,iB;MACI,IADoC,KACp
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A,4B;QAOsC,MAAL,SAAK,C;O;KAPtC,C;kFASA,yB;MAAA,iD;MAAA,kC;QAWuD,OAAK,WAAL,SAAK,EA
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EzE,6B;MAiBa,UAPF,M;MAFP,QAAc,S;MAGV,cAAK,UAAAL,U;QACI,mBAAK,UAAAL,G;;QACJ,IjDzBqC,MA
Aa,YiDyBvC,CjDzBuC,CiDyBiD,C;UAC6B,8BAAZb,CAAyB,C;;UAGN,UAAIB,uDAAKB,Y;;MAP3B,a;K;IC7B
6D,gD;K;;ICDjE,2B;MAEI,MAAM,yBAAqB,OAArB,C;K;IAGV,sB;MAEI,MAAM,uBAAMb,cAAnB,C;K;IAGV
,2B;MAEI,MAAM,6BAAsB,OAAtB,C;K;IAGV,iC;MAEI,MAAM,4CAAqC,uBAAqB,YAArB,8BAArC,C;K;ICIB
V,8B;MC8CW,kBzGqBiD,oB;MyGM9C,Q;MAAA,OAAK,0B;MAAf,OAAU,cAAV,C;QAAU,mB;QACN,UAAU,
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,aAAO,gBAAO,KAAP,CAAc,gBAAO,IAAP,C;;QAGzB,aAAO,gBAAO,SAAP,CAakB,gBAAO,IAAP,C;;MAG7
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AU,S;K;qFAEpB,qB;MAAQ,OAAQ,O;K;qFAEf,qB;MAAQ,OAAS,Q;K;qGAET,qB;MAAQ,OAAiB,gB;K;+FKn
R/F,gB;MAEkC,oB;QAAA,OAAgB,E;MAC9C,QAAQ,E;MACR,EAAE,MAAF,IAAY,I;MACZ,OAAO,C;K;+FAi
BX,8B;MAEkC,4B;QAAA,eAAqB,S;MAAW,oB;QAAA,OAAgB,E;MAC9E,QAAQ,E;MACR,EAAE,cAAF,IAAo
B,Y;MACpB,EAAE,MAAF,IAAY,I;MACZ,OAAO,C;K;0EAUx,4B;MAE6D,iBAAY,KAAZ,C;K;+GC6B7D,sJ;M
AEsC,mB;QAAA,MA4GuD,M;MA5GG,oB;QAAA,OAAgB,E;MAAI,oB;QAAA,OAAgB,E;MAAI,mB;QAAA,M
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,sB;QAAA,SAAmB,K;MAAO,wB;QAAA,WAAqB,K;MAAO,kC;QAAA,qBAA+B,K;MAAO,sB;QAAA,SAAmB,
K;MAAO,oB;QAAA,OAAa,I;MAAM,uB;QAAA,UAAc,E;MAC/gB,QAAQ,E;MACR,EAAE,KAAF,IAAW,G;M
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AAa,K;MACb,EAAE,MAAF,IAAY,I;MACZ,EAAE,OAAF,IAAa,K;MACb,EAAE,OAAF,IAAa,K;MACb,EAAE,
SAAF,IAAe,O;MACf,EAAE,WAAF,IAAiB,S;MACjB,EAAE,UAAF,IAAgB,Q;MACHb,EAAE,QAAF,IAAc,M;M
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OAAO,C;K;qHASX,e;MAEyC,mB;QAAA,MAAe,E;MACpD,QAAQ,E;MACR,EAAE,KAAF,IAAW,G;MACX,O
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;MAAO,wB;QAAA,WAAqB,K;MACrK,QAAQ,E;MACR,EAAE,cAAF,IAAoB,Y;MACpB,EAAE,QAAF,IAAc,M

;MACd,EAAE,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACIB,EAAE,UAAF,IAAgB,Q;MACHb,OAAO,C;K;iGAUwE,qB;MAAQ,OAAU,S;K;6FAEnB,qB;MAAQ,OAAS,Q;K;+FAEhB,qB;MAAQ,OAAU,S;K;2FASvB,qB;MAAQ,OAAO,M;K;yFAEhB,qB;MAAQ,OAAM,K;K;yFAEd,qB;MAAQ,OAAM,K;K;yGCrJ3F,uB;MAEsC,qB;QAAA,QAAiB,S;MAAW,oB;QAAA,ORy9MW,S;MQx9MzE,QAAQ,E;MACR,EAAE,OAAF,IAAa,K;MACb,EA AE,MAAF,IAAY,I;MACZ,OAAO,C;K;6HAuCX,mF;MAEgD,oB;QAAA,OAAa,S;MAAW,sB;QAAA,SAAkB,S;MAAW,2B;QAAA,cAAuB,S;MAAW,sB;QAAA,SAA2C,S;MAAW,qB;QAAA,QAA6B,S;MAAW,uB;QAAA,UA AoB,K;MAAO,0B;QAAA,aAAuB,K;MAAO,wB;QAAA,WAAqB,K;MAC/S,QAAQ,E;MACR,EAAE,MAAF,IAA Y,I;MACZ,EAAE,QAAF,IAAc,M;MACd,EAAE,aAAF,IAAmB,W;MACnB,EAAE,QAAF,IAAc,M;MACd,EAAE, OAAF,IAAa,K;MACb,EAAE,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACIB,EAAE,UAAF,IAAgB,Q;MA ChB,OAAO,C;K;uGA2DX,qC;MAEqC,mC;QAAA,sBAAGC,K;MAAO,oB;QAAA,OA4UD,Q;MA3UvE,QAAQ, E;MACR,EAAE,qBAAF,IAA2B,mB;MAC3B,EAAE,MAAF,IAAY,I;MACZ,OAAO,C;K;yGAmBX,yC;MAEsC,u B;QAAA,UAAoB,K;MAAO,0B;QAAA,aAAuB,K;MAAO,wB;QAAA,WAAqB,K;MACHh,QAAQ,E;MACR,EA AE,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACIB,EAAE,UAAF,IAAgB,Q;MACHb,OAAO,C;K;yGAsB X,2B;MAGI,QAAQ,E;MACR,EAAE,QAAF,IAAc,M;MACd,EAAE,SAAF,IAAe,O;MACf,OAAO,C;K;+FA8BX,s E;MAEoD,wB;QAAA,WAAoB,I;MAAM,wB;QAAA,WAAqB,K;MAAO,uB;QAAA,UAAoB,K;MAAO,0B;QAA A,aAAuB,K;MAAO,wB;QAAA,WAAqB,K;MACpL,QAAQ,E;MACR,EAAE,SAAF,IAAe,O;MACf,EAAE,UAAF ,IAAgB,Q;MACHb,EAAE,UAAF,IAAgB,Q;MACHb,EAAE,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACI B,EAAE,UAAF,IAAgB,Q;MACHb,OAAO,C;K;6GAuBX,0D;MAE2D,sB;QAAA,SAAkB,M;MAAQ,uB;QAAA,U AAoB,K;MAAO,0B;QAAA,aAAuB,K;MAAO,wB;QAAA,WAAqB,K;MAC/J,QAAQ,E;MACR,EAAE,SAAF,IA Ae,O;MACf,EAAE,QAAF,IAAc,M;MACd,EAAE,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACIB,EAAE, UAAF,IAAgB,Q;MACHb,OAAO,C;K;2GAaX,qC;MAE4D,sB;QAAA,SAAkB,S;MAAW,uB;QAAA,UAA0B,S;M AC/G,QAAQ,E;MACR,EAAE,UAAF,IAAgB,Q;MACHb,EAAE,QAAF,IAAc,M;MACd,EAAE,SAAF,IAAe,O;M ACf,OAAO,C;K;uHAuCX,mF;MAE6C,oB;QAAA,OAAa,S;MAAW,sB;QAAA,SAAkB,S;MAAW,2B;QAAA,cA AuB,S;MAAW,sB;QAAA,SAAmD,S;MAAW,qB;QAAA,QAA6B,S;MAAW,uB;QAAA,UAAoB,K;MAAO,0B;Q AAA,aAAuB,K;MAAO,wB;QAAA,WAAqB,K;MACpT,QAAQ,E;MACR,EAAE,MAAF,IAAY,I;MACZ,EAAE,Q AAF,IAAc,M;MACd,EAAE,aAAF,IAAmB,W;MACnB,EAAE,QAAF,IAAc,M;MACd,EAAE,OAAF,IAAa,K;MA Cb,EAAE,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACIB,EAAE,UAAF,IAAgB,Q;MACHb,OAAO,C;K;q GA+BX,6D;MAEoC,4B;QAAA,eAAyB,K;MAAO,4B;QAAA,eAAyB,K;MAAO,0B;QAAA,aAAuB,K;MAAO,yB ;QAAA,YAAqB,S;MACnJ,QAAQ,E;MACR,EAAE,cAAF,IAAoB,Y;MACpB,EAAE,cAAF,IAAoB,Y;MACpB,E AAE,YAAF,IAAkB,U;MACIB,EAAE,WAAF,IAAiB,S;MACjB,OAAO,C;K;yGakBX,4C;MAEsC,oB;QAAA,OA AgB,S;MAAW,uB;QAAA,UAAoB,S;MAAW,wB;QAAA,WAAsB,S;MAAW,uB;QAAA,UAA8B,S;MAC3J,QAA Q,E;MACR,EAAE,MAAF,IAAY,I;MACZ,EAAE,SAAF,IAAe,O;MACf,EAAE,UAAF,IAAgB,Q;MACHb,EAAE, SAAF,IAAe,O;MACf,OAAO,C;K;+FAkCmE,qB;MAAQ,OAAa,Y;K;6FAEtB,qB;MAAQ,OAAY,W;K;+FAEnB,q B;MAAQ,OAAa,Y;K;6FAEtB,qB;MAAQ,OAAY,W;K;6FAEpB,qB;MAAQ,OAAY,W;K;6FAStC,qB;MAAQ,OA AY,W;K;6FAEpB,qB;MAAQ,OAAY,W;K;uFAEvB,qB;MAAQ,OAAS,Q;K;qFAEnB,qB;MAAQ,OAAO,M;K;uF ASX,qB;MAAQ,OAAS,Q;K;yFAEjB,qB;MAAQ,OAAS,Q;K;qGAEX,qB;MAAQ,OAAe,c;K;iFAEhC,qB;MAAQ, OAAM,K;K;iGCharE,0E;MAEoC,gC;QAAA,mBAA6B,K;MAAO,sB;QAAA,SAAkB,C;MAAG,qB;QAAA,QAAi B,C;MAAG,uB;QAAA,UAAoB,K;MAAO,0B;QAAA,aAAuB,K;MAAO,wB;QAAA,WAAqB,K;MAC3L,QAAQ, E;MACR,EAAE,kBAAF,IAAwB,gB;MACxB,EAAE,QAAF,IAAc,M;MACd,EAAE,OAAF,IAAa,K;MACb,EAAE ,SAAF,IAAe,O;MACf,EAAE,YAAF,IAAkB,U;MACIB,EAAE,UAAF,IAAgB,Q;MACHb,OAAO,C;K;mFAU8E,q B;MAAQ,OAAG,E;K;+FAEL,qB;MAAQ,OAAC,a;K;iFAE7B,qB;MAAQ,OAAO,M;K;yFAEX,qB;MAAQ,OA AW,U;K;+EAEvB,qB;MAAQ,OAAO,M;K;+EAEf,qB;MAAQ,OAAO,M;K;oEnIjIvG,yB;MAAA,kF;MAAA,0B;MAA A,uB;QAaI,IAAI,OAAO,CAAP,IAA8B,OAAO,KAAzC,C;UACI,MAAM,8BAAYb,wBAAqB,IAA9C,C;QAEV,O AAY,OAAL,IAAK,C;O;KAhBhB,C;0EAyCiC,qB;MAAQ,OAAA,SAAK,I;K;IoI7C9C,iC;K;;ICMA,4B;K;;IA6BA ,gD;K;;IC5BA,qC;K;;IAyBA,+B;K;;IC6DqC,uC;MACjC,uB;QAAA,UAAsB,E;MACtB,qB;QAAA,+C;MADA,sB; MACA,kB;K;IAEA,4C;MAAA,e;MAAA,iB;MAAA,uB;K;IAAA,0C;MAAA,6C;O;MAKI,4E;MAGA,wE;K;;IAH A,mD;MAAA,gC;MAAA,2C;K;;IAGA,iD;MAAA,gC;MAAA,yC;K;;IARJ,sC;MAAA,2F;K;;IAAA,2C;MAAA,a;a AAA,S;UAAA,gD;aAAA,O;UAAA,8C;;UAAA,+D;;K;;IA+ByB,4B;MACzB,8B;K;;IAGJ,qC;K;;IAyC6C,4C;MA

CzC,8B;K;;ICpKqC,sC;MACrC,8B;K;;ICD4C,8B;K;kDAI5C,mB;MAA6D,c;;QIIsD7C,Q;QADhB,IAAI,mCAAs
B,cAA1B,C;UAAqC,aAAO,K;UAAP,e;;QACrB,sB;QAAhB,OAAgB,cAAhB,C;UAAgB,2B;UAAM,IkJJsD6C,OlJi
sD/B,SkJJsD+B,UlJisD7C,C;YAAwB,aAAO,I;YAAP,e;;;QAC9C,aAAO,K;;;MkJIsDsD,iB;K;uDAE7D,oB;MACa,
c;;QlJyqDG,Q;QADhB,IAAI,ckJxqDA,QlJwqDA,iBkJxqDA,QlJwqDsB,UAA1B,C;UAAqC,aAAO,I;UAAP,e;;QA
CrB,OkJzqDZ,QlJyqDY,W;QAAhB,OAAgB,cAAhB,C;UAAgB,yB;UAAM,IAAI,CkJzqDP,oBlJyqDkB,OkJzqDIB
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B,qE;MAAA,qB;QAC3D,OAAI,OAAO,uBAAX,GAAiB,mBAAjB,GAA6C,SAAH,EAAG,C;O;K;4CADjD,Y;MA
AkC,4BAAa,IAAb,EAAMb,GAAAnB,EAawB,GAAXb,kBAA6B,wCAA7B,C;K;2CAIIC,Y;MAI4C,uBAAgB,IAA
hB,C;K;mDAE5C,iB;MAI4D,yBAAgB,IAAhB,EAAsB,KAAtB,C;K;;IC/BhE,8B;MAAA,e;MAAA,iB;MAAA,uB;
K;IAAA,4B;MAAA,+B;O;MACI,4C;MACA,kD;MACA,0C;MACA,8C;K;;IAHA,mC;MAAA,kB;MAAA,2B;K;;I
ACA,sC;MAAA,kB;MAAA,8B;K;;IACA,kC;MAAA,kB;MAAA,0B;K;;IACA,oC;MAAA,kB;MAAA,4B;K;;IAJJ,
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AAA,iC;;UAAA,6D;;K;;IAOA,4B;MAKI,mD;MACA,2BAA4B,I;K;yCAE5B,Y;MAEiB,IAAN,I;MzJUX,IAAI,Ey
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ACH,M;UAAc,Y;UAAAd,K;aACA,O;UAAe,W;UAAf,K;;UACQ,wC;UAHL,K;;MAAP,W;K;sCAOJ,Y;MAIW,Q;
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kB;MACA,OAAO,kD;K;+CAEX,iB;MAII,2BAAY,K;MACZ,gD;K;sCAGJ,Y;MAII,+C;K;;ICjDkC,wB;MAoFtC,o
C;MApFgE,6B;K;sCAIhE,Y;MAAuC,0C;K;2CAEvC,mB;MAAwD,uB;;QpJoU3C,Q;QADb,YAAY,C;QACC,sB;
QAAb,OAAa,cAAb,C;UAAa,sB;UACT,IoJrUmE,OpJqUrD,IoJrUqD,UpJqUnE,C;YACI,sBAAO,K;YAAP,wB;;U
ACJ,qB;;QAEJ,sBAAO,E;;;MoJzUiD,0B;K;+CAEXD,mB;MAA4D,sB;;QpJ6V5D,eAAoB,0BAAa,SAAb,C;QACp
B,OAAO,QAAS,cAAhB,C;UACI,IoJ/VsE,OpJ+VxD,QAAS,WoJ/V+C,UpJ+VtE,C;YACI,qBAAO,QAAS,Y;YAA
hB,uB;;QAGR,qBAAO,E;;;MoJnWqD,yB;K;0CAE5D,Y;MAA+C,+CAAIb,CAAjB,C;K;kDAE/C,iB;MAAyD,+C
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B;MAA/E,kB;MAAmC,4B;MAC5D,eAAyB,C;MAGrB,+DAAKb,gBAA1B,EA6B,OAA7B,EAAsC,WAAK,KA
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X,Y;MAG+B,oEAAGB,IAAhB,C;K;IAE/B,2C;MAAA,oB;MACI,eACsB,C;K;kDAEtB,Y;MAAkC,sBAAQ,gB;K;
+CAEIC,Y;MAEe,gB;MADX,IAAI,CAAC,cAAL,C;QAAgB,MAAM,6B;MACX,iE;MAAX,OAAO,+B;K;;IAO0
B,sD;MAHzC,oB;MAGwD,iD;MAGhD,gEAAMb,KAAAnB,EA0B,WAAkB,KAA5C,C;MACA,eAAa,K;K;0DAG
jB,Y;MAAsC,sBAAQ,C;K;wDAE9C,Y;MAAgC,mB;K;uDAEhC,Y;MACI,IAAI,CAAC,kBAAL,C;QAAoB,MAA
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M,W;MACb,mB;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,gBAAgB,aAAc,O;QAC9B,IAAI,cAAQ,SAAR,CAAJ,C;
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AO,I;YAAP,e;;;QAC9C,aAAO,K;;;MqJzrDyD,iB;K;kDAEHhE,iB;MAEI,IAAI,gCAAJ,C;QAA+B,OAAO,K;MACt
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IX,iB;MAMI,IAAI,UAAU,IAAd,C;QAAoB,OAAO,I;MAC3B,IAAI,0BAAJ,C;QAAyB,OAAO,K;MACHc,IAAI,c
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C;IAOA,8B;MAU+E,OAAM,QAAN,KAAM,EAAM,qBAAc,YAAY,KAAM,OAAIB,CAAd,CAAN,C;K;sFAErF,y
B;MgBfA,wE;MhBeA,gC;QgBXiC,gBAAtB,oB;QhB8BiB,aY9DxB,W;QZ8DA,OY7DO,SI+B2C,Q;O;KhBwT,D
;uFA2BA,yB;MgBnCA,uE;MhBmCA,0C;QgB/ByC,gBAA9B,mBhBsDiB,QgBtDjB,C;QhBsD2B,aY7FIC,W;QZ6
FA,OY5FO,SiScmD,Q;O;KhB+B9D,C;4FAqCA,qB;MAK+D,QAAC,mB;K;kGAHEh,qB;MAWI,OAAO,qBAAGB
,mB;K;sFAG3B,yB;MAAA,oD;MAAA,4B;QAM2D,uCAAQ,U;O;KANnE,C;sFAQA,mC;MASI,OAAI,mBAAJ,G
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,wDAAmB,oBAxBoE,GAwBpE,C;O;KAhCpD,C;+EAUA,yB;MAAA,kC;MAAA,8B;MAAA,iC;QAKiC,Q;QAA7
B,OAAgD,CAAnB,wDAAmB,YAAL,GAAJ,C;O;KALpD,C;+EAOA,iC;MAKI,sBAAL,GAAJ,EAAS,KAAT,C;K;4
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qB;MAWoE,sB;K;kFAEpE,yB;MAAA,6B;MAAA,4B;QAIgE,qBAAK,aAAL,EAAU,eAAV,C;O;KAJhE,C;2FAM
A,wC;MAOiF,Q;MAAA,mCAAL,GAAL,oBAAY,c;K;uGAG7F,yB;MAAA,gB;MAAA,8B;MAAA,+C;QAMe,Q;Q
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;wFASJ,qB;MAMwF,OAAA,iBAAQ,W;K;wFAEHg,qB;MAMgH,OAAA,iBAAQ,W;K;4FAExH,6C;Mem1BoB,Q
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Ef/0BsC,Se+0BZ,CAAE,OAaf,CAA1B,C;;Mf/0BhB,OAA6B,W;K;wFAGjC,6C;Me20BoB,Q;MAAA,Ofn0BT,iBe
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yC,Ofp0BC,Meo0B1C,C;;Mfp0BhB,OAA6B,W;K;IAGjC,kC;MAIyB,Q;MAArB,wBAAqB,KAARb,gB;QAAqB,a
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;Uf90Ba,We+0Bb,aAAGB,Of/0Be,Ie+0B/B,Ef7xB2C,Se6xBjB,CAAE,OAAf,CAA1B,C;;Qf7xBhB,OAID6B,W;O;
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B,GAA+B,oBAAW,OAAdH,C;YAAL,K;;YACQ,0BAAM,qBAAoB,YAAY,cAAZ,CAApB,CAAN,C;YAHl,K;;Q
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B;MAAtCA,OAA+C,oBY1nBxC,WZ0nBwC,C;K;IAEnD,mC;MAQwB,kBAAf,aAAL,SAAK,C;MAqCK,YAAL,gB
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sBAAS,QAAS,WAAIB,e;K;+CAGX,kC;MAQqD,6BAAS,QAAS,WAAIB,e;K;;;;;IAYzD,mC;MAA2C,wB;MAC
vC,eAAoB,C;MACpB,mBAA4B,I;MAC5B,sBAAyC,I;MACzC,gBAAoC,I;K;gDAEpC,Y;MACI,OOAO,IAAP,C;
QACI,QAAM,YAAN,C;eACI,C;YAAA,K;eACA,C;YACI,IAAI,kCAAe,UAAAnB,C;cACI,eAAQ,C;cACR,OOAO,I
;;cAEP,sBAAe,I;;;YALvB,K;eAOA,C;YAAc,OOAO,K;eACrB,C;eAAA,C;YAAgC,OOAO,I;;YAC/B,MAAM,yB;;

QAGIB,eAAQ,C;QACR,WAAW,4B;QACX,gBAAW,I;QACX,I5HpFR,oBDgDQ,W6HoCY,kB7HpCZ,CChDR,C;
;K;6C4HwFA,Y;MACU,IASe,I;MATrB,QAAM,YAAN,C;aACI,C;aAAA,C;UAAcS,OAAO,qB;aAC7C,C;UACI,e
AAQ,C;UACR,OAAO,kCAAE,O;aAE1B,C;UACI,eAAQ,C;UACR,aACa,mF;UACb,mBAAY,I;UACZ,OAAO,M;;
UAEH,MAAM,yB;;K;uDAItB,Y;MACI,IAAI,CAAC,cAAL,C;QAAgB,MAAM,6B;;QAA8B,OAAO,W;K;2DAG/
D,Y;MAA4C,QAAM,YAAN,C;aACx,C;UADwC,OAC1B,6B;aACd,C;UAFwC,OAExB,6BAAsB,sBAAtB,C;;U
AFwB,OAGhC,6BAAsB,uCAAoC,YAAID,C;;K;IAOqC,4E;MAAA,oB;QACzC,wCAAW,C;QAAX,OACA,yB;O;
K;oDALR,+B;MACI,mBAAY,K;MACZ,eAAQ,C;MACR,OAA6C,0CAAAtC,c;K;IAUsC,+E;MAAA,oB;QACzC,w
CAAW,C;QAAX,OACA,yB;O;K;yDANR,kC;MACI,IAAI,CAAC,QAAS,UAAAd,C;QAAYB,M;MACzB,sBAAE,Q;
MACf,eAAQ,C;MACR,OAA6C,6CAAAtC,c;K;2DAMX,kB;M7HNO,Q;MADP,e6HSI,M7HTJ,C;MACO,Q6HQH,
M7HRG,+D;M6HSH,eAAQ,C;K;kGAIR,Y;MAAQ,0C;K;;ItK/KhB,oD;MAQuF,wC;K;IARvF,8CASI,Y;MAAuC,
8B;K;IAT3C,gF;sFAAA,yB;MAAA,kC;MAAA,0C;MAAA,kD;QAQuF,wC;O;MARvF,4CASI,Y;QAAuC,8B;O;M
AT3C,8E;MAAA,2B;QAQuF,2C;O;KARvF,C;IAiBgE,+C;MAAA,mB;QAAE,sB;O;K;IALIE,kC;MAKuD,OAAk
B,2CAAT,+BAAS,E;K;IAEzE,8B;MAK6D,OAAI,QdksPtD,YAAQ,CclsP0C,GAAwB,eAAxB,GAASD,WAAT,Q
AAS,C;K;IAEnH,yB;MAG8C,kC;K;IAE9C,yB;MAAA,6B;K;uCACI,Y;MAA6C,kC;K;2CAC7C,a;MAA4B,kC;K;
2CAC5B,a;MAA4B,kC;K;;IAHhC,qC;MAAA,oC;QAAA,mB;;MAAA,6B;K;oFAMA,yB;MAAA,2D;MAAA,4B;
QAM4D,uCAAQ,e;O;KANpE,C;IAGb4F,mH;MAAA,wC;MAAA,6B;MAAA,yB;MAAA,wC;MAAA,wD;MAAA,
kC;K;;;kDAAA,Y;;;;;cACxF,eAAe,uBAAa,W;cAC5B,IAAI,QAAS,UAAb,C;gBACI,gB;gCAAA,sCAAS,QAAT,
O;oBAAA,2C;yBAAA,yB;gBAAA,Q;;gBAEA,gB;gCAAA,sCAAS,iCAAT,O;oBAAA,2C;yBAAA,yB;gBAAA,Q;
;;;cAJJ,W;;cAAA,W;;;;;;;;;;K;IADwF,gE;MAAA,yD;uBAAA,uG;YAAA,S;iBAAA,Q;;iBAAA,uB;O;K;IAP5
F,4C;MAOmF,gBAAS,uCAAT,C;K;IAGbB,4B;MAAE,OAAA,EAAG,W;K;IAP3E,8B;MAO8D,4BAAQ,cAAR,C;
K;IAUQ,8B;MAAE,OAAA,EAAG,W;K;IAR3E,8B;MAQ8D,4BAAQ,gBAAR,C;K;IAM1B,8B;MAAE,S;K;IAJtC,
wC;MAEgB,Q;MADZ,IAAI,8CAAJ,C;QACI,OAA4C,CAApC,2EAAoC,kBAAQ,QAAR,C;;MAEHd,OAAO,uBA
AmB,SAAnB,EAAyB,gBAazB,EAAiC,QAAjC,C;K;IAGX,4B;MAYiB,Q;MAFb,YAAY,gB;MACZ,YAAY,gB;M
ACC,2B;MAAb,OAAa,cAAb,C;QAAa,sB;QACT,KAAM,WAAL,IAAK,MAAT,C;QACN,KAAM,WAAL,IAAK,O
AAT,C;;MAEV,OAAO,UAAS,KAAT,C;K;IAGX,+B;MAQqD,6BAAS,4BAAT,C;K;IAW0B,+G;MAAA,wC;MA
AA,6B;MAAA,yB;MAAA,0C;MAAA,4C;MAAA,0B;MAAA,kC;K;;;mDAAA,Y;;;;;kCAC9D,0C;cACb,gB;;;cA
AA,IAAO,iBT2FkD,US3FzD,C;gBAAA,gB;;;cACI,QAAQ,yBAAO,iBAAQ,iBAAO,KAAf,C;cACf,WAakB,WA
AP,iBAAO,C;cACIB,YAAgB,IAAI,iBAAO,KAAf,GAAqB,iBAAO,aAAI,CAAJ,EAAO,IAAP,CAA5B,GAA8C,I;
cAC1D,gB;8BAAA,iCAAM,KAAN,O;kBAAA,2C;uBAAA,yB;cAAA,Q;;cAJJ,gB;;;cAMJ,W;;;;;;;;K;IAR+E,
4D;MAAA,yD;uBAAA,mG;YAAA,S;iBAAA,Q;;iBAAA,uB;O;K;IAT/E,uC;MASmE,gBAAY,kCAAZ,C;K;IAkB
hC,0D;MAE/B,wB;QAAA,WAAgC,I;MADhC,0B;MACA,0B;MACA,4B;K;IAGuC,0E;MAAA,oD;MACnC,gBA
Ae,iCAAS,W;MACxB,iBAAqB,E;MACrB,gBAAmB,I;K;oEAEnB,Y;MACI,OAAO,aAAS,UAAhB,C;QACI,WA
AW,aAAS,O;QACpB,IAAI,wCAAU,IAAV,MAAmB,sCAAvB,C;UACI,gBAAW,I;UACX,iBAAY,C;UACZ,M;;
MAGR,iBAAY,C;K;8DAGhB,Y;MASW,Q;MARP,IAAI,mBAAa,EAajB,C;QACI,iB;MACJ,IAAI,mBAAa,CAAj
B,C;QACI,MAAM,6B;MACV,aAAa,a;MACb,gBAAW,I;MACX,iBAAY,E;MAEZ,OAAO,yE;K;iEAGX,Y;MACI,
IAAI,mBAAa,EAajB,C;QACI,iB;MACJ,OAAO,mBAAa,C;K;;2CAhC5B,Y;MAAuC,yD;K;;IA2C3C,qD;MAAY,
0B;MAAmC,gC;K;IACJ,gF;MAAA,0D;MACnC,gBAAE,oCAAS,W;K;iEACxB,Y;MACI,OAAO,6CAAY,aAAS,O
AArB,C;K;oEAGX,Y;MACI,OAAO,aAAS,U;K;;8CAPxB,Y;MAAuC,4D;K;qDAWvC,oB;MACI,OAAO,uBAA4B
,eAA5B,EAASc,kBAAtC,EAAMd,QAAND,C;K;;IAUf,4D;MAAY,0B;MAAmC,gC;K;IACJ,8F;MAAA,wE;MAC
nC,gBAAE,2CAAS,W;MACxB,aAAY,C;K;wEACZ,Y;MAC0C,Q;MAAtC,OAAO,oDAAY,oBAAmB,iBAAnB,E
AAmB,yBAAnB,QAAY,EAAYC,aAAS,OAAID,C;K;2EAGX,Y;MACI,OAAO,aAAS,U;K;;qDARxB,Y;MAAuC,m
E;K;;IAkB3C,oC;MAAY,0B;K;IAC6C,wE;MACJd,gBAAE,gCAAS,W;MACxB,aAAY,C;K;6DACZ,Y;MAC2C,Q
;MAAvC,OAAO,iBAAa,oBAAmB,iBAAnB,EAAMb,yBAAnB,QAAb,EAA0C,aAAS,OAAAnD,C;K;gEAGX,Y;M
ACI,OAAO,aAAS,U;K;;0CARxB,Y;MAAqD,wD;K;;IAMbZd,0D;MACI,4B;MACA,4B;MACA,4B;K;IAEuC,sE;
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AU,OAApB,EA44B,cAAU,OAAtC,C;K;+DAGX,Y;MACI,OAAO,cAAU,UAAV,IAAuB,cAAU,U;K;;yCARhD,Y
;MAAuC,uD;K;;IAC3C,6D;MACI,0B;MACA,gC;MACA,0B;K;IAEuC,4E;MAAA,sD;MACnC,gBAAE,kCAAS,W;
MACxB,oBAAiC,I;K;+DAEjC,Y;MACI,IAAI,CAAC,2BAAL,C;QACI,MAAM,6B;MACV,OAAO,gCAAE,O;K;k

EAG1B,Y;MACI,OAAO,2B;K;+EAGX,Y;MACQ,Q;MAAJ,IAAI,iEAA2B,KAA/B,C;QACI,oBAAe,I;MAEnB,O
AAO,yBAAP,C;QACI,IAAI,CAAC,aAAS,UAAAd,C;UACI,OAAO,K;;UAEP,cAAc,aAAS,O;UACvB,uBAAuB,wC
AAS,2CAA,Y,OAAZ,CAAT,C;UACvB,IAAI,gBAAiB,UAArB,C;YACI,oBAAe,gB;YACf,OAAO,I;;;MAInB,OA
AO,I;K;;4CA9Bf,Y;MAAuC,0D;K;;IAoC9B,6I;MAAA,wC;MAAA,6B;MAAA,yB;MAAA,4C;MAAA,kD;MAAA
,gD;MAAA,wB;MAAA,yB;MAAA,kC;K;;;yDAAA,Y;;;kBAGyC,I;iCAFIC,C;cACI,sD;cAAhB,gB;;;cAAA,KA
AgB,yBAAhB,C;gBAAA,gB;;;cAAGB,oC;cACZ,aAAa,6BAAU,oBAAmB,uBAAAnB,EAAMb,+BAAnB,QAAY,E
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;;;cAIJ,W;;;K;IANS,0F;MAAA,yD;uBAAA,iI;YAAA,S;iBAAA,Q;;iBAAA,uB;O;K;IADb,wD;MACI,gBA
AS,kDAAT,C;K;;;IAoByB,qD;MACzB,0B;MACA,8B;MACA,0B;MC3TA,IAAI,ED+TQ,qBAAC,CC/TtB,CAAJ,
C;QACI,cD8T2B,+CAA4C,iB;QC7TvE,MAAM,gCAAYB,OAAQ,WAAjC,C;;MAFV,IAAI,EDgUQ,mBAAAY,CCh
UpB,CAAJ,C;QACI,gBD+TyB,6CAA0C,e;QC9TnE,MAAM,gCAAYB,SAAQ,WAAjC,C;;MAFV,IAAI,EDiUQ,m
BAAAY,iBcjUpB,CAAJ,C;QACI,gBDgUkC,0DAAuD,eAAvD,WAAMe,iB;QC/TrG,MAAM,gCAAYB,SAAQ,WA
AjC,C;;K;SFDkUa,Y;MAAQ,yBAAW,iBAAX,I;K;yCAE/B,a;MAAyC,OAAI,KAAK,YAAT,GAAgB,eAAhB,GA
AqC,gBAAAY,eAAZ,EAAsB,oBAAa,CAAb,IAAtB,EAAsC,eAAtC,C;K;yCAC9E,a;MAAyC,OAAI,KAAK,YAAT,
GAAgB,IAAhB,GAA0B,gBAAAY,eAAZ,EAAsB,iBAAtB,EAAC,oBAAa,CAAb,IAAIC,C;K;IAEzC,8D;MAAA,w
C;MAETB,gBAAe,2BAAS,W;MACxB,gBAAe,C;K;0DAEf,Y;MAEI,OAAO,gBAAW,kCAAX,IAAyB,aAAS,UAA
zC,C;QACI,aAAS,O;QACT,qC;;K;2DAIR,Y;MACI,a;MACA,OAAQ,gBAAW,gCAAZ,IAAyB,aAAS,U;K;wDAG
7C,Y;MACI,a;MACA,IAAI,iBAAAY,gCAAhB,C;QACI,MAAM,6B;MACV,qC;MACA,OAAO,aAAS,O;K;;qCAvB
xB,Y;MAA0B,mD;K;;IAgCA,uC;MAC1B,0B;MACA,oB;MC3WA,IAAI,ED+WQ,gBAAS,CC/WjB,CAAJ,C;QA
CI,cD8WsB,yCAAsC,YAAtC,M;QC7WtB,MAAM,gCAAYB,OAAQ,WAAjC,C;;K;0CDgXV,a;MAAyC,OAAI,K
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OAAI,KAAK,YAAT,GAAgB,IAAhB,GAA0B,iBAAa,eAAb,EAuB,CAAvB,C;K;IAE5B,gE;MACnC,YAAW,yB
;MACX,gBAAe,4BAAS,W;K;yDAExB,Y;MACI,IAAI,cAAQ,CAAZ,C;QACI,MAAM,6B;MACV,6B;MACA,OA
AO,aAAS,O;K;4DAGpB,Y;MACI,OAAO,YAAO,CAAP,IAAY,aAAS,U;K;;sCAZpC,Y;MAAuC,oD;K;;IASB3C,g
D;MACI,0B;MACA,4B;K;IAEuC,0E;MAAA,oD;MACnC,gBAAe,iCAAS,W;MACxB,iBAAqB,E;MACrB,gBAA
mB,I;K;oEAEnB,Y;MACI,IAAI,aAAS,UAAb,C;QACI,WAAW,aAAS,O;QACpB,IAAI,wCAAU,IAAV,CAAJ,C;U
ACI,iBAAAY,C;UACZ,gBAAW,I;UACX,M;;;MAGR,iBAAAY,C;K;8DAGhB,Y;MAMiB,Q;MALb,IAAI,mBAAa,E
AAjB,C;QACI,iB;MACJ,IAAI,mBAAa,CAAJB,C;QACI,MAAM,6B;MACV,aACa,gF;MAGb,gBAAW,I;MACX,i
BAAAY,E;MACZ,OAAO,M;K;iEAGX,Y;MACI,IAAI,mBAAa,EAAjB,C;QACI,iB;MACJ,OAAO,mBAAa,C;K;;2C
AIC5B,Y;MAAuC,yD;K;;IA2Cb,uC;MAC1B,0B;MACA,oB;MC5bA,IAAI,ED+bQ,gBAAS,CC/bjB,CAAJ,C;QAC
I,cD8bsB,yCAAsC,YAAtC,M;QC7btB,MAAM,gCAAYB,OAAQ,WAAjC,C;;K;0CDgcV,a;MItXO,SJxXmC,eAAQ
,CAAR,I;MAAD,OAA4B,KAAK,CAAT,GAAY,yBAAZ,GAAuC,iBAAa,eAAb,EAuB,EAavB,C;K;0CACxG,a;
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YAAtB,EAA6B,EAA7B,C;K;IAEjE,gE;MACnC,gBAAe,4BAAS,W;MACxB,YAAW,yB;K;2DAEX,Y;MAEI,OA
AO,YAAO,CAAP,IAAY,aAAS,UAA5B,C;QACI,aAAS,O;QACT,6B;;K;yDAIR,Y;MACI,a;MACA,OAAO,aAAS,
O;K;4DAGpB,Y;MACI,a;MACA,OAAO,aAAS,U;K;;sCAnxB,Y;MAAuC,oD;K;;IA6B3C,gD;MACI,0B;MACA,
4B;K;IAGuC,0E;MAAA,oD;MACnC,gBAAe,iCAAS,W;MACxB,iBAAqB,E;MACrB,gBAAmB,I;K;gEAEnB,Y;
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AAW,I;UACX,iBAAAY,C;UACZ,M;;;MAGR,iBAAAY,C;K;8DAGhB,Y;MAMqB,Q;MALjB,IAAI,mBAAa,EAAjB,
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kB,aAAS,U;K;;2CAIC1C,Y;MAAuC,yD;K;;IAuCN,+C;MAAC,sB;MAAiC,gC;K;0CACnE,Y;MAAuC,4BAAiB,a
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vB,Y;MACI,OAAO,aAAO,UAAAd,C;QACI,WAAW,aAAO,O;QACIB,UAAU,mBAAAY,IAAZ,C;QAEV,IAAI,eAA
S,WAAI,GAJ,CAAb,C;UACI,mBAAQ,IAAR,C;UACA,M;;;MAIR,W;K;;IAKgC,0D;MAAC,wC;MAAuC,kC;K;
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a,8D;MAEb,iBAAY,E;MACZ,OAAO,M;K;iEAGX,Y;MACI,IAAI,iBAAY,CAAhB,C;QACI,iB;MACJ,OAAO,mB
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C,W;K;gFAEX,Y;MAAQ,Q;K;iCAC/B,Y;MAAKC,W;K;wCACIC,mB;MAAmD,Y;K;6CACnD,oB;MAAmE,OAA
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,mB;QAQsD,2B;O;KARtD,C;IAUA,kC;MAKiE,OAAS,aAAT,QAAS,EAAa,qBAAc,YAAY,QAAS,OAARB,CAA
d,CAAb,C;K;uFAEIE,yB;MAAA,2D;MAAA,mB;QAGgD,qB;O;KAHhD,C;IAKA,+B;MAC2D,OAAS,aAAT,QA
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ANxD,C;IAQA,iC;MAKME,OAAS,aAAT,QAAS,EAAa,qBAAc,YAAY,QAAS,OAARB,CAAd,CAAb,C;K;IAE5E,
+B;MAMyD,OAAI,eAAJ,GAAqB,MAAM,OAAN,CAARB,GAAyC,U;K;IAEIG,kC;MAQI,OAAgB,gBAAT,QAAS,
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W/CO,SIUwC,Q;O;KfkBnD,C;wFA2BA,yB;Me1CA,wE;Mf0CA,0C;QetCsC,gBAA3B,mBf6DiB,Qe7DjB,C;Qf6D
2B,aW/EIC,W;QX+EA,OW9EO,SliBgD,Q;O;KfsC3D,C;sFAGCA,yB;MAAA,mD;MAAA,4B;QAEkD,uCAAQ,U;
O;KAFID,C;IAIA,wC;MAAgD,QAAM,cAAN,C;AC5C,C;UAD4C,OACvC,U;aACL,C;UAF4C,OAEvC,MAAM,
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,+C;MAW2C,IAAI,IAAJ,EAGV,M;MAL7B,IAAI,+CAAJ,C;QAEI,OAAW,GAAL,kBAAS,SAAK,IAAd,CAAR,G
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CrB,OAAW,WAAW,OAAf,GAAwB,OAAxB,GAAqC,E;K;kDAGhD,mB;MAA4C,0BAAQ,OAAR,C;K;+CAE5C,
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IAAV,CIK+iG3C,C;K;IkK7iGX,4D;MAOgD,yB;QAAA,YAAiB,C;MAAG,uB;QAAA,UAAe,KAAM,K;MACrF,4
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B8D,YsM0FD,KtM1FkB,KAAjB,EsM0FO,ItM1FsB,KAA7B,CsM0FD,I1LrH7D,CAAJ,C;QACI,c0LoH6E,+B;Q1
LnH7E,MAAM,gCAAyB,OAAQ,WAAjC,C;;K;I0LoHd,4C;MILtHI,IAAI,EKmC+D,aqLmFC,KrLnFiB,KAAIB,E
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E5B,Y;MAAkC,2BAAE,UAAF,+BAAU,SAAV,C;K;IAEIC,+B;MAAA,mC;MACI,aAC8B,cAAy,OAAF,CAAE,C
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B;K;wFAKR,Y;MAC3B,IAAI,cAAQ,UAAZ,C;QOyFyC,MAAM,6BPjFd,6EOiF4C,WAA9B,C;;MPhF/C,OAAO,Y
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,yC;MACI,YAGqC,oBAAgB,IAAhB,EAAsB,IAAtB,C;K;iGAQJ,Y;MAAQ,gB;K;4DAEzC,gB;MAOI,8DAAqC,I
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gD;QAAA,+B;;MAAA,yC;K;;2CArCJ,Y;MAWI,oB;K;2CAXJ,Y;MAeI,gB;K;6CAfJ,0B;MAAA,2BAWI,8CAXJ,E
AeI,kCAfJ,C;K;yCAAA,Y;MAAA,c;MAWI,yD;MAIA,qD;MAfJ,a;K;uCAAA,iB;MAAA,4IAWI,4CAXJ,IAeI,oC
AfJ,I;K;ICLA,kC;MAAA,e;MAAA,iB;MAAA,uB;K;IAAA,gC;MAAA,mC;O;MAYI,4D;MAKA,8C;MAKA,gD;K
;;IAVA,2C;MAAA,sB;MAAA,mC;K;;IAKA,oC;MAAA,sB;MAAA,4B;K;;IAKA,qC;MAAA,sB;MAAA,6B;K;;IA
tBJ,4B;MAAA,mG;K;;IAAA,iC;MAAA,a;aAAA,W;UAAA,wC;aAAA,I;UAAA,iC;aAAA,K;UAAA,kC;;UAAA,6
D;;K;;6ECAA,yB;MAAA,4F;MAAA,2B;QASI,MAAM,mCAA8B,0EAA9B,C;O;KATV,C;ICkCA,+D;MAAw,Q;
MAAP,OAAO,8CAA0,KAAP,EAac,UAAAd,EAA0B,QAA1B,oC;K;IAGX,kC;MAIiB,Q;MAAb,wBAAa,KAAb,g
B;QAAa,WAAA,KAAb,M;QACI,yBAAO,IAAP,C;;MACJ,OAAO,S;K;mFAGX,qB;MAGwD,gCAA0,EAAP,C;K
;qFAExD,4B;MAG4E,OAAA,yBAAO,KAAP,CALpB,gBAAO,EAAP,C;K;qFAOxD,4B;MAGmE,OAAA,yBAAO
,KAAP,CAVX,gBAAO,EAAP,C;K;IAaxD,wD;MAEQ,sB;QAAqB,yBAAO,UAAU,OAAV,CAAP,C;WACrB,sD;
QAA4B,yBAAO,OAAP,C;WAC5B,2B;QAAMB,yBAAO,kBAAP,C;;QACX,yBAAe,SAAR,OAAQ,CAaf,C;K;ItL
7EhB,+B;MAY6B,kBAAIB,QAAQ,SAAR,EAac,EAAd,C;MACH,IX0EE,WW1EE,GAAK,CAAT,C;QAAy,MA
AM,gCAAyB,oEAzB,C;MADtB,OX4EO,W;K;IWvEX,wC;MAGBsC,IAA3B,I;MAAA,qCAAiB,KAAjB,C;MAA
A,iB;QAA2B,MAAM,gCAAyB,8BAAO,SAAP,4CAA+C,KAAxE,C;;MAAxC,OAAO,I;K;IAGX,qC;MAY6B,kB
AAIB,QAAQ,SAAR,EAac,EAAd,C;MAAP,OXmEqB,WWnEa,IAAM,CXmEjC,GAAqB,WAArB,GAA+B,I;K;I
WhE1C,8C;MAGBI,WAAW,KAAX,C;MAC4B,kBAArB,QAAQ,SAAR,EAac,KAAd,C;MAAP,OX+CqB,WW/Cg
B,IAAM,CX+CpC,GAAqB,WAArB,GAA+B,I;K;IW5C1C,gC;MAWI,IAAY,CAAR,8BAAW,CAaf,C;QACI,OA
AO,YAAM,SAAN,C;;MAEX,MAAM,gCAAyB,SAAM,SAAN,4BAAzB,C;K;IAGV,yC;MAKBW,Q;MANP,IAAI,
EAAU,CAAV,sBAAa,EAAb,CAAJ,C;QACI,MAAM,gCAAyB,oBAAiB,KAAjB,4CAAzB,C;;MAEV,IAAI,YAA
O,CAAP,IAAY,aAAQ,KAAxB,C;QACI,MAAM,gCAAyB,WAAQ,SAAR,mDAAwD,KAAjF,C;;MAEH,IAAI,YA

AO,EAAX,C;QACH,mBAAM,SAAN,C;;QAEA,0BAAM,SAAN,IAAa,EAAb,C;;MAHJ,W;K;IAuFJ,8B;MAWSc,
+B;K;0EAEtC,4B;MAM8D,OAAK,oBAAL,SAAK,CAAL,GAaKB,K;K;IAEHf,gD;MAQoC,0B;QAAA,aAAsB,K;
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B,SFrMyB,CAAY,cAfrB,YAAAY,CAAZ,CEoNhB,KFrMyB,oBEqMI,UFrMJ,CAAY,cAfrB,YAAAY,CAAZ,C;;MEo
NID,W;K;IAGJ,gC;MAGyC,QAAQ,cAAA,sCAAK,cAAL,EAAoB,sCAAK,cAAzB,CAAR,6B;K;IuL3OzC,6C;MA
e6B,4B;QAAA,eAAuB,G;MACHD,wCAAsB,EAAtB,EAA0B,YAA1B,C;K;IAEJ,mE;MAKwC,yB;QAAA,YAAoB
,E;MAAI,4B;QAAA,eAAuB,G;MrMEf,IAAI,CmBwR+C,CAAC,QkLzR5C,YILyR4C,CnBxRpD,C;QACI,cqMFi
C,wC;QrMGjC,MAAM,gCAAYB,OAAQ,WAAjC,C;;MqMFV,cAAy,gB;MAEC,yBAAS,mBAAS,YAAA,SAAU,
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ES,C;M/Lg7CT,kBAAoB,gB;MAwSd,gB;MADb,YAAAY,C;MACC,O+LnyDN,O/LmyDM,W;kBAAb,OAAa,cAAb
,C;QAAA,sB;QA9RsB,U;QAAA,cA8RT,oBAAMb,cAAnB,EAAMb,sBAAnB,U;Q+LntDIB,kB;;YAHA,CAAC,Y
AAS,CAAT,IAAc,qBAAf,KAA4C,Q/LstDG,I+LttDH,C;UAC5C,a;;UAEA,4B;UA/E+B,uB;;YnLgHzB,kC;YAAA,
wbZkrDyC,IYlrDzC,C;YAAA,qB;YAAA,oB;YAAA,oB;YAAAd,gE;cACI,ImLjHkD,CAAI,aAAH,UnLiHrC,YZirD
qC,IYjrDrC,YAAK,OAAL,EmLjHqC,CAAG,CnLiHtD,C;gBACI,sBAAO,O;gBAAP,wB;;YAGR,sBAAO,E;;Um
LrHH,iD;UAGI,gCAA2B,EAA3B,C;YAHJ,2BAGqC,I;IBACjC,IAAK,a/L8xD0C,I+L9xD1C,gBAAYb,uBAAZB,C
AAL,C;YAJJ,2B/LkyDmD,IO9kDsB,WwLhNI,0BAAuC,mBAAvC,IxLgNJ,C;;YwLpNzE,2BAKY,I;UA0ER,iEl
MND,yBkMMC,4B/LmtD+C,I;;QA9RpB,8B;UAA6C,6B;;M+LrgDhF,OakFK,S/Lo7CE,W+Lp7CF,EAAO,mBA
Ac,kBAAd,CAAP,EAA0C,IAA1C,CACA,W;K;IAxET,+B;MAGByC,gCAAc,EAAd,C;K;IAEzC,6C;MAGgC,yB;Q
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AY,WAAI,OAAJ,C;;M+L9wBrD,kB/L+wBE,W;MAMrBA,oBAAM,iBAaAa,qCAAwB,EAAxB,CAAb,C;MAuEA,
U;MAAA,+B;MAAb,OAAa,gBAAb,C;QAAA,wB;QACT,aAAy,uBAAc,IAAd,E;;M+L5gDhB,sBAAsB,CAGjB,o
B/L0gDE,a+L1gDF,CAHiB,mBAGF,C;MAEP,yBAAS,mBAAS,YAAA,SAAU,OAAV,EAAMb,OAAM,KAAzB,
CAAT,I;MAAT,wBAAiD,kBAaKB,SAAIB,C;MAMc9D,gBAAGb,iBAnCT,OAmCS,C;M/Lg7CT,oBAAoB,gB;M
AwSd,kB;MADb,YAAAY,C;MACC,S+L3vDN,O/L2vDM,W;MAAb,OAAa,gBAAb,C;QAAA,0B;QA9RsB,U;QAA
A,cA8RT,oBAAMb,cAAnB,EAAMb,sBAAnB,U;Q+LntDIB,kB;Q/Lq7C2B,c+Lx7C3B,CAAC,YAAS,CAAT,IAA
c,qBAAf,KAA4C,Q/LstDG,M+LttDH,C/Lw7CjB,G+Lv7C3B,I/Lu7C2B,G+Lr7C3B,oBAxCmG,Q/L2vDpD,M+L3
vDoD,kBAwCnG,YIMND,yBkMMC,4B/LmtD+C,MA9RpB,U;UAA6C,+B;;M+L79ChF,OA0CK,S/Lo7CE,a+Lp7
CF,EAAO,mBAAc,kBAAd,CAAP,EAA0C,IAA1C,CACA,W;K;IAjCI,8C;MAAA,qB;QAEG,IAAG,QAAH,EAAG
,CAAH,C;UAEQ,IAAA,EAAG,OAAH,GAAY,cAAO,OAAAnB,C;YAHZ,OAGyC,c;;YAHzC,OAIoB,E;;UAJpB,O
AOY,iBAAS,E;O;K;IAfjC,0C;MAKgC,sB;QAAA,SAAiB,M;MAC7C,OAYK,eAXA,OADL,uBACK,EAAl,4BAA
J,CAWA,EAAa,IAAb,C;K;IAET,gC;MAAwC,uB;;QnLkDtB,gC;QAAA,gC;QAAA,mB;QAAA,kB;QAAA,kB;QA
Ad,0D;UACI,ImLnD+C,CAAI,aAAH,UnLmDlC,iCAAK,KAAL,EmLnDkC,CAAG,CnLmDnD,C;YACI,sBAAO,
K;YAAP,wB;;QAGR,sBAAO,E;;Mf5CA,4B;MkMX6B,OAA8C,OAAM,EAIV,GAAC,gBAAd,GAA0B,E;K;IA
GpF,wC;MAAkB,W;K;IAC9B,oD;MAAA,uB;QAaKB,wBAAS,I;O;K;IAFvC,mC;MACI,IAAA,MILgMgD,YAAU
,CkLhM1D,C;QAD4C,OACxB,wB;;QADwB,OAEPc,kC;K;mBAGZ,yB;M/L86CA,+D;MAwSA,wE;M+LttDA,sF;
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sB;UA9RsB,U;UAAA,cA8RT,oBAAMb,cAAnB,EAAMb,sBAAnB,U;U+LntDIB,kB;U/Lq7C2B,c+Lx7C3B,CAA
C,YAAS,CAAT,IAAc,qBAAf,KAA4C,Q/LstDG,I+LttDH,C/Lw7CjB,G+Lv7C3B,I/Lu7C2B,G+Lr7C3B,sC/LmtD
+C,I+LntD/C,alMND,yBkMMC,4B/LmtD+C,IA9RpB,U;YAA6C,6B;;Q+Lz7ChF,OAMK,S/Lo7CE,W+Lp7CF,E
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O,GAAP,C;K;qFAExE,yB;MAAA,yD;MAAA,gC;QAO2B,gBAAhB,oB;QAAsB,apHrU7B,W;QoHqUA,OpHpUO
,SoHoUqC,W;O;KAPhD,C;uFAUA,yB;MAAA,iE;MAAA,0C;QAQmC,gBAAXb,mBAAc,QAAAd,C;QAA8B,apHh
VrC,W;QoHgVA,OpH/UO,SoH+U6C,W;O;KARxD,C;IAWA,oC;MAIiB,Q;MAAb,wBAAa,KAAb,gB;QAAA,WA
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8B;O;KAJrG,C;qFAMA,qB;MAG8D,gCAAO,EAAP,C;K;qFAE9D,4B;MAGkF,OAAA,yBAAO,KAAP,CALpB,g

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;;QAOP,OAA0C,yB;O;KAJ9C,C;IAMA,kC;MAhEI,iBAAiB,C;MACjB,eAAe,mBAAS,CAAT,I;MACf,iBAAiB,K;
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,gC;MAAQ,gE;K;IAWN,gC;MAAQ,gE;K;IAQZ,6B;MAAQ,6D;K;IAOP,+B;MAAQ,+D;K;IAWN,+B;MAAQ,+D;
K;yEAG/B,+B;MAIqE,8BAAW,SAAX,C;K;2EAERe,+B;MAUwE,8BAAW,SAAX,C;K;IAIxE,yC;MACI,aAAa,K
AAM,O;MACnB,IAAI,WAAU,CAAd,C;QAAiB,MAAM,gCAAYB,qBAAzB,C;MACvB,YAAY,C;MACZ,aAAa,g
CAAS,K;MACtB,qBAaqB,U;MACrB,QAAM,iBAAM,KAAN,CAAN,C;aACI,E;aAAA,E;UAAy,qB;UAAZ,K;;M
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I,iBAAM,KAAN,MAAgB,EAAPB,C;YACI,IAAI,mBAAmB,mCAAW,MAAIC,C;cAA0C,MAAM,+B;YACHD,kB
AAkB,I;YACIB,Q;;UAEkB,iBAAE,K;UA+EjD,QAHgC,U;UAIhC,Y;YAAO,eAhFqB,KAgFjB,O;YAAJ,S;cAAc,S
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;;UAhF7B,gBAAgB,KkBlICgE,WIB8pCf,UkB9pCkF,ElBmqCrF,CkbnqCqF,C;UIBmlChF,IAAI,SwBziCgC,YA
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YvB4sCO,MAAM,gCAAYB,qCAAzB,C;;UAA9C,qB;UACA,qB;UACA,WAAW,sBAAsB,QAAtB,EAAGC,eAAh
C,C;UACX,IAAI,YAAY,IAAZ,IAAoB,yBAAY,IAAZ,MAAxB,C;YAA0C,MAAM,gCAAYB,yCAAzB,C;UACHD,
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C,EAAW,IAAX,CAA3C,C;YACA,4BAAMd,aAAX,SAA9B,SkBjmCmD,WIBimC/B,QkBjmC+B,CIBimCrB,CA
AW,EAAW,IAAX,CAAnD,C;;YAEA,4BAA+C,aAArC,0BAA0B,SAA1B,CAAqC,EAAW,IAAX,CAA/C,C;;aAI
Z,c;QACI,MAAM,+B;;QACV,IAAM,cAAN,KAAM,EAAC,KAAd,EAAqB,cAArB,EAAGC,CAArC,ESnzCH,MA
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CS,mBAAE,K;YA0CjD,UAHgC,Y;YAIhC,Y;YAAO,mBA3CqB,KA2CjB,O;cAAJ,W;gBAAC,WAAU,YA3CH,KA
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B,C;QAAyC,a;;MACzC,OAAO,C;K;;;;IAmBX,8B;MAA+C,qCAAQ,OAAR,E;K;IAC/C,+B;MAAgD,2CAAS,OA
AT,E;K;IAEhD,sC;MAAiD,oBAAS,sBAAgB,CAAhB,CAAT,C;K;IACjD,wC;MAAmD,oBAAU,uBAAiB,CAAjB,
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AAT,C;K;IACpE,0C;MACI,IAAI,sEAAqB,SAArB,CAAJ,C;QAAA,OACI,gBAAgB,KAAhB,C;;QADJ,OAGI,iBA
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K;;;IABJ,4C;MAAA,2C;QAAA,0B;;MAAA,oC;K;IAKEA,gC;MAAA,oC;K;;;IAAA,4C;MAAA,2C;QAAA,0B;;M
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C;K;;IAYO,4C;MAAC,gB;MAAoB,4B;K;4CAC/C,Y;MAAsC,OAAA,SAAK,aAAL,cAAoB,eAAPB,C;K;6CAEtC
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K;+iDAGtC,Y;MAA6C,mDA Ae,WAAf,EAAuB,IAAvB,EAA6B,gCAAS,KAAtC,C;K;+IAGjD,0B;MAG8B,yE;M
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,OAxDI,UAWDH,8BAAO,CAAP,EAAD,kCAxDA,C;QACI,OAAO,sBAAsB,MAAtB,EAA8B,QAA9B,C;+MAGX,
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,UAAx,eAAwB,CAAtD,C;QAA0D,MAAM,gCAAyB,uCAAzB,C;MACH E,OAAO,M;K;IAGX,iD;MACI,WA AW,
qBA AW,CAAX,C;MACX,IA sCA,OA tCI,IAAK,mBAsCR,8BAAO,CAAP,EAAD,kCA tCA,C;QAEI,OAA8D,uBA
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C,ODwMR,eAAW,OCtPI,cAAc,IAAd,EDqLjB,cCvImB,KDuIT,KAAL,GAAiB,GAAtB,CCrLiB,CA4Lf,KD0DW,
CAAX,C;O;KChNrC,C;wFASA,yB;MC8HA,6B;MDnLA,kD;MCKPJ,4B;MAAA,iC;MD7LI,wB;QAQ+C,OCgMR,
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O;KDxMvC,C;wFASA,yB;MA9DA,kD;MA8DA,wB;QAQ2C,OAhES,cAAc,IAAd,EAgEL,KAhEK,C;O;KAWDp
D,C;wFASA,yB;MAyIA,kBAS6D,sB;MAT7D,+B;MiBzMA,oD;MjBgEA,wB;QAQ6C,OiBIES,ejB4MjB,eAAW,o
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V,C;O;KANzC,C;gGAQA,yB;MAAA,8C;MAAA,wB;QAE6D,0BAAU,IAAV,EAAGB,KAHhB,C;O;KAF7D,C;S
G AIA,yB;MAAA,yC;MAAA,wB;QAQgE,mBAAW,KAAx,C;O;KARhE,C;wFAUA,yB;MAAA,6B;MAAA,2B;QA
OmD,qBAAK,aAAS,QAAd,C;O;KAPnD,C;wFASA,yB;MAAA,6B;MAAA,2B;QAOMD,qBAAK,cAAU,QAaf,C;
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D,C;SFAGA,yB;MAAA,6B;MAAA,wB;QAEgD,qBAAK,IAAK,KAAL,GAAa,KAAM,KAAxB,C;O;KAFhD,C;wF
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B;MAAA,6B;MAAA,mB;QAEgC,qBAAU,CAAL,SAAL,C;O;KAFhC,C;8EAIA,yB;MAAA,0B;MAAA,mB;QAU
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;O;KAXxC,C;uEAaA,yB;MAAA,gD;MAAA,4B;QASyC,oBAaKB,SAAIb,C;O;KATzC,C;wEAUA,yB;MAAA,gD
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8PK,KiC9Pd,C;K;8CAGnB,oB;MACY,Q;MAA2B,gBAA3B,gE;MAA2B,c;;QfioDvB,U;QADhB,IAAI,wCAAsB,
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;;MAAA,mC;K;;IAyJ,oD;MA4CI,uC;MATCI,IAAI,SAAQ,CAAZ,C;QAAuB,MAAA,gCAAyB,wBAAzB,C;MACp
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;K;sGAsBA,yB;MIB+RA,WAS6D,wB;MAT7D,+B;MkBVQA,gD;MAxBA,wB;QAM0D,OAYBS,aAAa,IAAK,KA

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AQA,yB;MhBwRA,aAS6D,0B;MAT7D,+B;MgBxQA,gD;MAhBA,wB;QAM2D,OAIbQ,aAAa,IAAK,KAAIB,EA
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,yB;MjBmSA,kBAS6D,sB;MAT7D,+B;MiB3RA,gD;MARA,wB;QAMyD,OASU,aAAa,IAAK,KAAIB,EAA8B,Cj
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,gD;MAAA,wB;QAOMe,oBAAa,IAAK,KAAIB,EAAwB,KAAM,KAA9B,C;O;KAPnE,C;4FASA,yB;MIB8PA,W
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D,+B;MgB5PA,wB;QAEwD,OAMD,eAAM,IAAK,KAAK,KAAW,ChB6P7C,eAAW,oBgBnQkB,KhBmQvB,KA
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,KAAK,KAAM,KAAX,CAAhB,C;O;KAFvD,C;8FAIA,yB;MIBiPA,WAS6D,wB;MAT7D,+B;MkBjPA,wB;QAEw
D,OASA,eAAM,IAAK,KAAK,UAAy,CIB+O/C,eAAW,oBkBxPmB,KIBwPxB,KAAK,CAAL,UAAN,CkB/O+C,
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C;O;KARxD,C;8FAGA,yB;MjB+PA,kBAS6D,sB;MAT7D,+B;MiB/PA,wB;QAEuD,OAGC,eAAM,IAAK,KAAK,
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FAGA,yB;MAAA,+B;MAAA,wB;QAEwD,sBAAM,IAAK,KAAK,UAAy,KAAM,KAAM,KAZ,CAAhB,C;O;KAFxD,C
;8FAIA,yB;MIBoOA,WAS6D,wB;MAT7D,+B;MkBpOA,wB;QAEwD,OASA,eAAM,IAAK,KAAK,UAAy,CIBk
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ArBA,wB;QAMsD,OAqBA,eAAe,IAAf,EIBwLjB,eAAW,oBkB7Me,KIB6MpB,KAAK,CAAL,UAAN,CkBxLiB,C
;O;KA3btD,C;0FAOA,yB;MhBoMA,aAS6D,0B;MAT7D,+B;MgBtLA,oD;MAdA,wB;QAMuD,OAcd,eAAe,IAAf
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,CAAL,iBAAN,CiBzOiB,C;O;KA6CtD,C;oGAOA,yB;MatDA,8C;MASDA,wB;QAMkD,OA1DI,YAAy,IAAZ,E
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B;MkBjNI,wB;QAQ6C,OIBoNP,eAAW,OkB3PK,eAAe,IAAf,EIBwLjB,eAAW,oBkBjJM,KIBiJX,KAAK,CAAL,
UAAN,CkBxLiB,CAsLjB,KIBqEY,SAAX,C;O;KkB5NtC,C;0FASA,yB;MhBwIA,aAS6D,0B;MAT7D,+B;MgBtL
A,oD;MhBuPJ,4B;MAAA,iC;MgBzMI,wB;QAQ+C,OhB4MP,gBAAY,QgB5PE,eAAe,IAAf,EhByLjB,eAAW,oBg
BzIQ,KhByIb,KAAK,CAAL,YAAN,CgBzLiB,CAGMf,KhB4Da,SAAZ,C;O;KgBpNx,C;0FASA,yB;MjBkJA,kB

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wVW,C;;YQ5VM,ORgBY,SAAU,CA4U5B,SQvVP,YAAAnB,IAAI,UAAe,CRuVO,CA5U4B,MAAK,GAAW,CA4
U5C,SQvVY,URuVZ,CA5U4C,MAAX,IAAf,C;;;K;IQRzD,0B;MAEI,IAAE,QAAF,CAAe,CAAf,C;QAD2C,OA
C9B,2B;;QACb,SS4SuC,cT5SIC,6BAAM,US4S0C,KAAAd,CT5SvC,C;UAF2C,OAER,6BAAM,U;;UACzC,SS2Su
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AAF,CAAe,CS8Vc,C;;YTIWK,OSUY,UAAW,CAwV5B,UT3VF,uBAA3B,IAAI,oBAAUb,CS2VE,CAxV4B,MA
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AAC,MAAO,EAAW,IAAJ,EAaf,IAAgC,C;K;IAE/G,0B;MAC8C,OAAC,qBAAO,EAAP,CAAW,WAAZ,GAAyB
,IAAZB,GAAiC,YAAjC,W;K;IAG9C,0B;MAA8C,uBAAc,CAAd,EAaiB,EAajB,C;K;IAE9C,kC;MACI,IAAI,gB
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,EAAD,WAAwB,CAAxB,C;MACf,UAAU,WAAI,sCAAW,IAAX,EAajC;MACV,IAAI,kBAAO,IAAX,C;QACI,
uCAAO,IAAP,E;QACA,4CAAY,CAAZ,E;;MAEJ,OAAGB,WAAT,QAAS,EAAS,IAAT,CAAT,GAA8B,WAAJ,G
AAI,EAAS,IAAT,C;K;IiO1FzC,qC;K;;

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Modified by Atlassian

The binary file of the original library has been modified by Atlassian in such way that classes have changed their package names from 'org.jfree' to 'clover.org.jfree'. This was necessary to avoid potential name conflicts during instrumentation of a code using the original library when using Clover. No source code of the original library was modified.

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Modified by Atlassian

The binary file of the original library has been modified by Atlassian in such way that classes have changed
their package names from 'com.keypoint/org.jfree' to 'clover.com.keypoint/clover.org.jfree'. This was
necessary to avoid potential name conflicts during instrumentation of a code using the original library when
using Clover. No source code of the original library was modified.

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The primary ANTLR guy:

Terence Parr
parrt@cs.usfca.edu
parrt@antlr.org
onoMnApeShTpQtDJbcUgJTIFONPQeUndIgfQWWNNddIwBl
mi2Kp5RjfhIJdGCSO<bOTNof2KNxm9KCi5lxEyKI9BJW3p
qOPQUXpopOopMMPqnPnXXQPNOPNRnqQNQqStwVxuQSTtVW
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Modified by Atlassian

The binary file of the original library has been modified by Atlassian in such way that classes have changed their package name from 'com.google.json' to 'clover.com.google.json'. This was necessary to avoid potential name conflicts during instrumentation of a code using the original library when using Clover. No source code of the original library was modified.

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File: Core.js

Description:

Provides common utility functions and the Class object used internally by the library.

Also provides the <TreeUtil> object for manipulating JSON tree structures

Some of the Basic utility functions and the Class system are based in the MooTools Framework <<http://mootools.net>>. Copyright (c) 2006-2009 Valerio Proietti, <<http://mad4milk.net/>>. MIT license <<http://mootools.net/license.txt>>.

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```
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/timestamps/TimestampStrategyFactory.java
*
/opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/timestamps/Java8TimestampStrategy.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/timestamps/PreJava8TimestampStrategy.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/timestamps/TimestampStrategy.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ZipEntryUtil.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ZipUtil.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ZTFileUtil.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/FileSource.java
*
/opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ZipEntrySource.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ZipEntryCallback.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ZipInfoCallback.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/IdentityNameMapper.java
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-
jar/org/zeroturnaround/zip/ByteSource.java
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```

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*
*/
```

Found in path(s):

```
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/extra/ZipShort.java  
*  
/opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/extra/AsiExtraField.java  
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/extra/ExtraFieldUtils.java  
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/extra/ZipLong.java  
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/extra/ZipConstants.java  
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/extra/ZipExtraField.java  
* /opt/cola/permits/1820506552_1697149599.2539036/0/zt-zip-1-14-sources-5-  
jar/org/zeroturnaround/zip/extra/UnrecognizedExtraField.java
```

1.433 libpng 1.6.38

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1.434 openssl 1.0.2u

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jar/io/netty/handler/codec/compression/BrotliDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/DeflateOptions.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/ZstdOptions.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/BrotliEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Brotli.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Zstd.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/ZstdEncoder.java
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* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/GzipOptions.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/BrotliOptions.java

*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/CompressionOptions.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/ZstdConstants.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/StandardCompressionOptions.java

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* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/DefaultHeadersImpl.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ValueConverter.java

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*/
/**

* Enumeration of supported Base64 dialects.

* <p>

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* Base64 Encoder/Decoder.

*/

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jar/io/netty/handler/codec/compression/JdkZlibDecoder.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
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image/io.netty.netty-codec/native-image.properties
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jar/io/netty/handler/codec/compression/ByteBufChecksum.java
```

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/compression/CompressionUtil.java
```

```
*
```

```
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/string/LineEncoder.java
```

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/string/LineSeparator.java
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```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/CodecOutputList.java
```

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/DateFormat.java
```

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
jar/io/netty/handler/codec/DatagramPacketEncoder.java
```

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-  
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jar/io/netty/handler/codec/compression/Lz4XXHash32.java
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 */
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```
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 * Utility class for { @link ByteBuf } that encodes and decodes to and from
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 * <p>
 * The encoding and decoding algorithm in this class has been derived from
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 */
```

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*

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jar/io/netty/handler/codec/compression/Bzip2Rand.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Lz4Constants.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2DivSufSort.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Crc32.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/AsciiHeadersEncoder.java
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/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/LzmaFrameEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/LzfEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/SnappyFramedEncoder.java
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jar/io/netty/handler/codec/json/JsonObjectDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2Constants.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/MessageAggregationException.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2BitWriter.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/Bzip2Encoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
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jar/io/netty/handler/codec/compression/FastLzFrameDecoder.java
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*/

/**

* A decoder that splits the received { @link ByteBuf}s dynamically by the
* value of the length field in the message. It is particularly useful when you
* decode a binary message which has an integer header field that represents the
* length of the message body or the whole message.

*

<p>

* { @link LengthFieldBasedFrameDecoder } has many configuration parameters so
* that it can decode any message with a length field, which is often seen in
* proprietary client-server protocols. Here are some example that will give
* you the basic idea on which option does what.

*

* <h3>2 bytes length field at offset 0, do not strip header</h3>

*

* The value of the length field in this example is <tt>12 (0x0C)</tt> which
* represents the length of "HELLO, WORLD". By default, the decoder assumes

* that the length field represents the number of the bytes that follows the length field. Therefore, it can be decoded with the simplistic parameter combination.

```
* <pre>
* <b>lengthFieldOffset</b> = <b>0</b>
* <b>lengthFieldLength</b> = <b>2</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0 (= do not strip header)
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content
* |---->| Length | Actual Content |
* | 0x000C | "HELLO, WORLD" | | 0x000C | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
* </pre>
```

* <h3>2 bytes length field at offset 0, strip header</h3>

* Because we can get the length of the content by calling { @link ByteBuffer#readableBytes() }, you might want to strip the length field by specifying <code>initialBytesToStrip</code>. In this example, we specified <code>2</code>, that is same with the length of the length field, to strip the first two bytes.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* <b>initialBytesToStrip</b> = <b>2</b> (= the length of the Length field)
*
* BEFORE DECODE (14 bytes)    AFTER DECODE (12 bytes)
* +-----+-----+ +-----+
* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" | | "HELLO, WORLD" |
* +-----+-----+ +-----+
* </pre>
```

* <h3>2 bytes length field at offset 0, do not strip header, the length field represents the length of the whole message</h3>

* In most cases, the length field represents the length of the message body only, as shown in the previous examples. However, in some protocols, the length field represents the length of the whole message, including the message header. In such a case, we specify a non-zero <code>lengthAdjustment</code>. Because the length value in this example message is always greater than the body length by <code>2</code>, we specify <code>-2</code> as <code>lengthAdjustment</code> for compensation.

```
* <pre>
```

```

* lengthFieldOffset = 0
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-2</b> (= the length of the Length field)
* initialBytesToStrip = 0
*
* BEFORE DECODE (14 bytes)      AFTER DECODE (14 bytes)
* +-----+-----+-----+-----+
* | Length | Actual Content |-----| Length | Actual
  Content |
* | 0x000E | "HELLO, WORLD" |   | 0x000E | "HELLO, WORLD" |
* +-----+-----+-----+-----+
* </pre>
*
* <h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>
*
* The following message is a simple variation of the first example. An extra
* header value is prepended to the message. <tt>lengthAdjustment</tt> is zero
* again because the decoder always takes the length of the prepended data into
* account during frame length calculation.
* <pre>
* <b>lengthFieldOffset</b> = <b>2</b> (= the length of Header 1)
* <b>lengthFieldLength</b> = <b>3</b>
* lengthAdjustment = 0
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)      AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+
* | Header 1 | Length | Actual Content |-----| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" |
  | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+-----+
* </pre>
*
* <h3>3 bytes length field at the beginning of 5 bytes header, do not strip header</h3>
*
* This is an advanced example that shows the case where there is an extra
* header between the length field and the message body. You have to specify a
* positive <tt>lengthAdjustment</tt> so that the decoder counts the extra
* header into the frame length calculation.
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 3
* <b>lengthAdjustment</b> = <b>2</b> (= the length of Header 1)
* initialBytesToStrip = 0
*
* BEFORE DECODE (17 bytes)      AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+
* | Length | Header 1 | Actual Content |-----| Length | Header 1 | Actual Content |

```



```
* | 0x00000C | 0xCAFE | "HELLO, WORLD" | | 0x00000C | 0xCAFE | "HELLO,
WORLD" |
```

```
* +-----+-----+-----+ +-----+-----+-----+
* </pre>
```

* **2 bytes length field at offset 1 in the middle of 4 bytes header,
strip the first header field and the length field**

* This is a combination of all the examples above. There are the prepended header before the length field and the extra header after the length field. The prepended header affects the `lengthFieldOffset` and the extra header affects the `lengthAdjustment`. We also specified a non-zero `initialBytesToStrip` to strip the length field and the prepended header from the frame. If you don't want to strip the prepended header, you could specify `0` for `initialBytesToSkip`.

```
* <pre>
* lengthFieldOffset = 1 (= the length of HDR1)
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>1</b> (= the length of HDR2)
* <b>initialBytesToStrip</b> = <b>3</b> (= the length of HDR1 +
LEN)
```

```
* BEFORE DECODE (16 bytes)          AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x000C | 0xFE | "HELLO, WORLD" | | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+
```

* **2 bytes length field at offset 1 in the middle of 4 bytes header,
strip the first header field and the length field, the length field
represents the length of the whole message**

* Let's give another twist to the previous example. The only difference from the previous example is that the length field represents the length of the whole message instead of the message body, just like the third example. We have to count the length of HDR1 and Length into `lengthAdjustment`. Please note that we don't need to take the length of HDR2 into account because the length field already includes the whole header length.

```
* <pre>
* lengthFieldOffset = 1
* lengthFieldLength = 2
* <b>lengthAdjustment</b> = <b>-3</b> (= the length of HDR1 + LEN, negative)
* <b>initialBytesToStrip</b> = <b>3</b>
```

```
* BEFORE DECODE (16 bytes)          AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+
```

```
* | HDR1 | Length | HDR2 | Actual Content |---->| HDR2 | Actual Content |
* | 0xCA | 0x0010 | 0xFE | "HELLO, WORLD" |   | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+-----+-----+-----+
* </pre>
* @see LengthFieldPrepender
*/
```

Found in path(s):

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java
```

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Found in path(s):

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/SnappyOptions.java
```

```
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
jar/io/netty/handler/codec/compression/EncoderUtil.java
```

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* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/EmptyHeaders.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/Headers.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/DefaultHeaders.java

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Found in path(s):

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/LineBasedFrameDecoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/DecoderException.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/PrematureChannelClosureException.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/ThreadLocalMarshallerProvider.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/bytes/ByteArrayEncoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingEncoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/MarshallingDecoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/EncoderException.java

*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/MessageToMessageEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/FixedLengthFrameDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/package-info.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/SnappyFrameDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoderInputStream.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ClassLoaderClassResolver.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/Snappy.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/string/package-info.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/ZlibUtil.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/JZlibEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/DefaultMarshallerProvider.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/bytes/package-info.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/xml/package-info.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ReplayingDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/CodecException.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ObjectDecoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/MessageToByteEncoder.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/LengthFieldPrepender.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/string/StringEncoder.java
*
/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/base64/package-info.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/ZlibEncoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ReferenceMap.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/UnsupportedMessageTypeException.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ClassResolver.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/string/StringDecoder.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/SoftReferenceMap.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/SnappyFrameEncoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/JZlibDecoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/Delimiters.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/CompactObjectInputStream.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/TooLongFrameException.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/LimitingByteInput.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/package-info.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/ClassResolvers.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/WeakReferenceMap.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ByteToMessageDecoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/ContextBoundUnmarshallerProvider.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/serialization/package-info.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/compression/CompressionException.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteInput.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-

jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/bytes/ByteArrayDecoder.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/MessageToMessageDecoder.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/MessageToMessageCodec.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/marshalling/ThreadLocalUnmarshallerProvider.java
 *
 /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/compression/ZlibDecoder.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/serialization/CompatibleObjectEncoder.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/compression/ZlibCodecFactory.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/marshalling/UnmarshallerProvider.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/MessageAggregator.java
 *
 /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/CorruptedFrameException.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/compression/DecompressionException.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/protobuf/package-info.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/serialization/CachingClassResolver.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/DecoderResult.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/compression/JdkZlibEncoder.java
 *
 /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/compression/ZlibWrapper.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/base64/Base64Encoder.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/marshalling/package-info.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/ByteToMessageCodec.java
 * /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-
 jar/io/netty/handler/codec/base64/Base64Decoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/DefaultUnmarshallerProvider.java
* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/marshalling/ChannelBufferByteOutput.java
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Found in path(s):

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/UnsupportedValueConverter.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufEncoderNano.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufEncoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufVarint32LengthFieldPrepender.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufVarint32FrameDecoder.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufDecoderNano.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ProtocolDetectionState.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/ProtocolDetectionResult.java

* /opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/HeadersUtils.java

*

/opt/cola/permits/1820904464_1697192357.6491582/0/netty-codec-4-1-100-final-sources-jar/io/netty/handler/codec/protobuf/ProtobufDecoder.java

1.436 netty-resolver 4.1.100.Final

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```
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-
jar/io/netty/resolver/ResolvedAddressTypes.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-
jar/io/netty/resolver/HostsFileEntries.java
```

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```

Found in path(s):

```
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-
jar/io/netty/resolver/InetAddressResolver.java
```


* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/DefaultHostsFileEntriesResolver.java
*
/opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/AddressResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/CompositeNameResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/DefaultNameResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/InetSocketAddressResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/DefaultAddressResolverGroup.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/HostsFileEntriesResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/AbstractAddressResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/HostsFileParser.java

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Found in path(s):

* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/META-INF/maven/io.netty/netty-resolver/pom.xml

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Found in path(s):

* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/RoundRobinInetAddressResolver.java
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* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/NameResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/SimpleNameResolver.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/package-info.java
*
/opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/NoopAddressResolverGroup.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/AddressResolverGroup.java
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-jar/io/netty/resolver/NoopAddressResolver.java
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Found in path(s):

```
* /opt/cola/permits/1820904471_1697192352.9256797/0/netty-resolver-4-1-100-final-sources-
jar/io/netty/resolver/HostsFileEntriesProvider.java
```

1.437 netty 4.1.100.Final

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```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ReflectionUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/PriorityQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/LongAdderCounter.java
```

*

/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/NettyRuntime.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/LocationAwareSlf4JLogger.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/SuppressForbidden.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ObjectCleaner.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/UncheckedBooleanSupplier.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/EmptyPriorityQueue.java

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
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<groupId>org.jctools</groupId>
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<version>3.1.0</version>
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<name>Java Concurrency Tools Core Library</name>
```

```
<description>Java Concurrency Tools Core Library</description>
```

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<packaging>bundle</packaging>
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<dependencies>
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<dependency>
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<scope>test</scope>
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<artifactId>guava-testlib</artifactId>
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</dependencies>
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  <plugins>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-surefire-plugin</artifactId>
      <version>3.0.0-M3</version>
      <configuration>
        <includes>
          <include>*</include>
        </includes>
      </configuration>
    </plugin>
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      <groupId>org.apache.felix</groupId>
      <artifactId>maven-bundle-plugin</artifactId>
      <version>4.2.1</version>
      <extensions>>true</extensions>
      <configuration>
        <instructions>
          <Import-Package>sun.misc;resolution:=optional</Import-Package>
        </instructions>
      </configuration>
    </plugin>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-source-plugin</artifactId>
      <version>3.2.0</version>
      <executions>
        <execution>
          <id>attach-sources</id>
          <phase>verify</phase>
          <goals>
            <goal>jar-no-fork</goal>
          </goals>
        </execution>
      </executions>
    </plugin>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-javadoc-plugin</artifactId>
      <version>3.1.1</version>
      <configuration>
        <additionalOptions>
          <additionalOption>-Xdoclint:none</additionalOption>
        </additionalOptions>
        <source>8</source>
      </configuration>
      <executions>

```

```

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  <id>attach-javadocs</id>
  <goals>
    <goal>jar</goal>
  </goals>
</execution>
</executions>
</plugin>
</plugins>
</build>

<distributionManagement>
  <repository>
    <id>bintray-jctools-jctools</id>
    <name>jctools-jctools</name>
    <url>https://api.bintray.com/maven/jctools/jctools/jctools-core/;publish=1</url>
  </repository>
</distributionManagement>

<url>https://github.com/JCTools</url>
<inceptionYear>2013</inceptionYear>

<licenses>
  <license>
    <name>Apache
License, Version 2.0</name>
    <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
    <distribution>repo</distribution>
  </license>
</licenses>

<scm>
  <url>https://github.com/JCTools/JCTools</url>
  <connection>scm:git:https://github.com/JCTools/JCTools</connection>
  <tag>HEAD</tag>
</scm>

<developers>
  <developer>
    <url>https://github.com/nitsanw</url>
  </developer>
  <developer>
    <url>https://github.com/mjpt777</url>
  </developer>
  <developer>
    <url>https://github.com/RichardWarburton</url>
  </developer>
  <developer>

```

```

<url>https://github.com/kay</url>
</developer>
<developer>
  <url>https://github.com/franz1981</url>
</developer>
</developers>

<prerequisites>
<maven>3.5.0</maven>
</prerequisites>

<properties>
<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
<java.version>1.6</java.version>
<java.test.version>1.8</java.test.version>

<maven.compiler.source>${java.version}</maven.compiler.source>
<maven.compiler.target>${java.version}</maven.compiler.target>
<maven.compiler.testSource>${java.test.version}</maven.compiler.testSource>
<maven.compiler.testTarget>${java.test.version}</maven.compiler.testTarget>

<hamcrest.version>1.3</hamcrest.version>
<junit.version>4.12</junit.version>
<guava-testlib.version>21.0</guava-testlib.version>
</properties>
</project>

```

Found

in path(s):

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/META-INF/maven/org.jctools/jctools-core/pom.xml

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/SuppressJava6Requirement.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/NetUtilSubstitutions.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/NetUtilInitializations.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/DomainWildcardMappingBuilder.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/ResourceLeakHint.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Mapping.java

*

/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/AsciiString.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/UnpaddedInternalThreadLocalMap.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/DomainNameMapping.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/NativeLibraryLoader.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/InternalThreadLocalMap.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/PromiseAggregator.java

*

```
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/ThreadDeathWatcher.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/PromiseNotifier.java
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Found in path(s):

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/PlatformDependent0Substitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ThreadExecutorMap.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/PlatformDependentSubstitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/CleanerJava6Substitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/UnsafeRefArrayAccessSubstitution.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/Hidden.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/svm/package-info.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ReferenceCountUpdater.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ObjectPool.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/META-INF/native-image/io.netty/netty-common/native-image.properties

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/CharsetUtil.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/DefaultEventExecutor.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/package-info.java

*

/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Slf4JLogger.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/EventExecutorGroup.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/InternalLogLevel.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Log4JLoggerFactory.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/AbstractConstant.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/SystemPropertyUtil.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/DefaultAttributeMap.java

*

/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/MultithreadEventExecutorGroup.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/IllegalReferenceCountException.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/SucceededFuture.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/AttributeKey.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/Timeout.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/Constant.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/GlobalEventExecutor.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/Signal.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/AbstractInternalLogger.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/SingleThreadEventExecutor.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/CommonsLoggerFactory.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/package-info.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/Slf4JLoggerFactory.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/Attribute.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/HashedWheelTimer.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/AttributeMap.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/JdkLoggerFactory.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/NetUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/DefaultEventExecutorGroup.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/Timer.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/InternalLoggerFactory.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/EventExecutor.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/FailedFuture.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/TimerTask.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/PlatformDependent.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/BlockingOperationException.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/StringUtil.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/InternalLogger.java

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/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/CommonsLogger.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/META-INF/maven/io.netty/netty-common/pom.xml

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jar/io/netty/util/internal/logging/FormattingTuple.java
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/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/logging/MessageFormatter.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Log4J2Logger.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ThrowableUtil.java

*

/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/RejectedExecutionHandler.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/IntSupplier.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/OutOfDirectMemoryError.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/RejectedExecutionHandlers.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/UnorderedThreadPoolEventExecutor.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/UnaryPromiseNotifier.java

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/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/NonStickyEventExecutorGroup.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/PromiseNotificationUtil.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/MacAddressUtil.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/EventExecutorChooserFactory.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/PromiseCombiner.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/BooleanSupplier.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/UnstableApi.java

*

/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/logging/Log4J2LoggerFactory.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/DefaultEventExecutorChooserFactory.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/OrderedEventExecutor.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/SocketUtils.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/internal/NativeLibraryUtil.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/DomainNameMappingBuilder.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/ResourceLeakDetectorFactory.java

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jar/io/netty/util/collection/ShortObjectMap.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/collection/ByteObjectMap.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/collection/ShortCollections.java

*

/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/collection/CharObjectMap.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/collection/IntCollections.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/collection/LongCollections.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

jar/io/netty/util/collection/CharObjectHashMap.java

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jar/io/netty/util/collection/ByteObjectHashMap.java

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/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/collection/CharCollections.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/collection/LongObjectHashMap.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/collection/ByteCollections.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/ObjectUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/collection/ShortObjectHashMap.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/FastThreadLocalThread.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/CleanerJava9.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
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jar/io/netty/util/concurrent/Promise.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/EmptyArrays.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/ThreadPerTaskExecutor.java
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jar/io/netty/util/internal/logging/package-info.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/ImmediateExecutor.java

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jar/io/netty/util/concurrent/ScheduledFuture.java

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jar/io/netty/util/concurrent/DefaultPromise.java

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jar/io/netty/util/ResourceLeak.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/Recycler.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/package-info.java

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/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/ResourceLeakDetector.java

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/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/RecyclableArrayList.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/AppendableCharSequence.java

* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/AbstractFuture.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/concurrent/DefaultFutureListeners.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-

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jar/io/netty/util/ResourceLeakException.java
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jar/io/netty/util/internal/ReadOnlyIterator.java
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jar/io/netty/util/internal/PendingWrite.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/DefaultProgressivePromise.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/ReferenceCountUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/GenericFutureListener.java
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jar/io/netty/util/concurrent/CompleteFuture.java
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jar/io/netty/util/concurrent/FutureListener.java
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jar/io/netty/util/concurrent/ImmediateEventExecutor.java
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jar/io/netty/util/concurrent/AbstractEventExecutor.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
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- * /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/AtomicQueueFactory.java
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- /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/MpscUnboundedArrayQueue.java
- * /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseSpscLinkedAtomicArrayQueue.java
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- * /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpmcAtomicArrayQueue.java
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- /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/LinkedQueueNode.java
- * /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpmcAtomicArrayQueue.java

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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
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/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/SpvcUnboundedArrayQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscChunkedAtomicArrayQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/util/UnsafeJvmInfo.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpvcLinkedAtomicQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/SpvcUnboundedAtomicArrayQueue.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/IndexedQueueSizeUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscUnboundedAtomicArrayQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/MpmcUnboundedXaddChunk.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/MpscLinkedAtomicQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-


```
jar/io/netty/util/internal/shaded/org/jctools/queues/MpscBlockingConsumerArrayQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/ConcurrentSequencedCircularArrayQueue.java
*
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/util/RangeUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/BaseSpSCLinkedListArrayQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/atomic/BaseLinkedListAtomicQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/queues/SpmcArrayQueue.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/shaded/org/jctools/maps/ConcurrentAutoTable.java
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```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/ByteProcessorUtils.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/ResourcesUtil.java
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io.netty.util.internal.Hidden$NettyBlockHoundIntegration
```

Found in path(s):

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-jar/META-
INF/services/reactor.blockhound.integration.BlockHoundIntegration
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```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/ThreadProperties.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/DefaultPriorityQueue.java
```

*

```
/opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/LongCounter.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/PriorityQueueNode.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/DomainMappingBuilder.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/HashingStrategy.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/AsyncMapping.java
```

```
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/concurrent/AbstractScheduledEventExecutor.java
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* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/internal/MathUtil.java
* /opt/cola/permits/1820904486_1697192360.8623555/0/netty-common-4-1-100-final-sources-
jar/io/netty/util/ByteProcessor.java

1.438 netty-transport 4.1.100.Final

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Manifest-Version: 1.0

Implementation-Title: Netty/Transport

Bundle-Description: Netty is an asynchronous event-driven network application framework for rapid development of maintainable high performance protocol servers and clients.

Automatic-Module-Name: io.netty.transport

Bundle-License: <https://www.apache.org/licenses/LICENSE-2.0>

Bundle-SymbolicName: io.netty.transport

Implementation-Version: 4.1.100.Final

Built-By: norman

Bnd-LastModified: 1696948198155

Bundle-ManifestVersion: 2

Implementation-Vendor-Id: io.netty

Bundle-DocURL: <https://netty.io/>

Bundle-Vendor: The Netty Project

Import-Package: io.netty.bootstrap,io.netty.buffer;version="[4.1,5)",io.netty.channel,io.netty.channel.nio,io.netty.channel.oio,io.netty.channel.socket,io.netty.resolver;version="[4.1,5)",io.netty.util;version="[4.1,5)",io.netty.util.concurrent;version="[4.1,5)",io.netty.util.internal;version="[4.1,5)",io.netty.util.internal.logging;version="[4

.1,5)",sun.nio.ch;resolution:=optional,org.eclipse.jetty.npn;version=
"[1,2)";resolution:=optional,org.eclipse.jetty.alpn;version="[1,2)";r
esolution:=optional
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.6))"
Tool: Bnd-6.3.1.202206071316
Implementation-Vendor: The Netty Project
Export-Package: io.netty.bootstrap;uses:="io.netty.channel,io.netty.re
solver,io.netty.util";version="4.1.100",io.netty.channel;uses:="io.ne
tty.bootstrap,io.netty.buffer,io.netty.util,io.netty.util.concurrent"
;version="4.1.100",io.netty.channel.embedded;uses:="io.netty.channel"
;version="4.1.100",io.netty.channel.group;uses:="io.netty.channel,io.
netty.util.concurrent";version="4.1.100",io.netty.channel.internal;ve
rsion="4.1.100",io.netty.channel.local;uses:="io.netty.channel";versi
on="4.1.100",io.netty.channel.nio;uses:="io.netty.buffer,io.netty.cha
nnel,io.netty.util,io.netty.util.concurrent";version="4.1.100",io.net
ty.channel.oio;uses:="io.netty.buffer,io.netty.channel";version="4.1.
100",io.netty.channel.pool;uses:="io.netty.bootstrap,io.netty.channel
,io.netty.util.concurrent";version="4.1.100",io.netty.channel.socket;
uses:="io.netty.buffer,io.netty.channel,io.netty.util";version="4.1.1
00",io.netty.channel.socket.nio;uses:="io.netty.buffer,io.netty.chann
el,io.netty.channel.nio,io.netty.channel.socket";version="4.1.100",io
.netty.channel.socket.oio;uses:="io.netty.buffer,io.netty.channel,io.
netty.channel.oio,io.netty.channel.socket";version="4.1.100"
Bundle-Name: Netty/Transport
Bundle-Version: 4.1.100.Final
Build-Jdk-Spec: 1.8
Created-By: Apache Maven Bundle Plugin 5.1.8
Build-Jdk: 1.8.0_382
Implementation-URL: <https://netty.io/netty-transport/>

Found in path(s):

* /opt/cola/permits/1820904472_1697534654.900729/0/netty-transport-4-1-100-final-jar/META-
INF/MANIFEST.MF

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* /opt/cola/permits/1820904472_1697534654.900729/0/netty-transport-4-1-100-final-jar/META-INF/maven/io.netty/netty-transport/pom.xml

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* /opt/cola/permits/1820904472_1697534654.900729/0/netty-transport-4-1-100-final-jar/META-INF/native-image/io.netty/netty-transport/native-image.properties

1.439 openjdk-jre 17.0.8.1u1

1.439.1 Available under license :

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Marti Maria

Contributors

Bob Friesenhahn

Kai-Uwe Behrmann

Stuart Nixon

Jordi Vilar

Richard Hughes

Auke Nauta

Chris Evans (Google)

Lorenzo Ridolfi

Robin Watts (Artifex)

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xwd v1.0.7

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rt/modules/javafx.web/src/main/native/

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Dynalink v.5

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Mesa 3-D Graphics Library v21.0.3

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Mesa 3-D

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include/GL/glxext.h  
include/GL/wglxext.h :
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rt/modules/javafx.media/src/main/native/gstreamer/gstreamer-lite/

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Little Color Management System (LCMS) v2.15

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AUTHORS File Information

...

Main Author

Marti Maria

Contributors

Bob Friesenhahn

Kai-Uwe Behrmann

Stuart Nixon

Jordi Vilar

Richard Hughes

Auke Nauta

Chris Evans (Google)

Lorenzo Ridolfi

Robin Watts (Artifex)

Shawn Pedersen

Andrew Brygin

Samuli

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Florian Hch

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...

Behdad Esfahbod
David Corbett
David Turner
Ebrahim Byagowi
Garret Rieger
Jonathan Kew
Khaled Hosny
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Martin Hosken

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jopt-simple v5.0.4

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| Ext headers | GL/glxt.h | Khronos |
| | GL/glxt.h | Khronos |
| | GL/wglxt.h | Khronos |
| | KHR/khrplatform.h | Khronos |

include/GL/gl.h :

Mesa 3-D
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```
include/GL/glex.h  
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1.441 curl 7.77.0

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*

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jar/io/netty/handler/ssl/OpenSslSessionCache.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/BouncyCastleAlpnSslEngine.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/GroupsConverter.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/BouncyCastleAlpnSslUtils.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/BouncyCastle.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslAsyncPrivateKeyMethod.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/SslContextOption.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/SslProtocols.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionId.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslContextOption.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/Ciphers.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/AsyncRunnable.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslClientSessionCache.java
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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ConscryptAlpnSslEngine.java

*

/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslClientHelloHandler.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/Conscrypt.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslCloseCompletionEvent.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/AbstractSniHandler.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OptionalSslHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkAlpnSslUtils.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SniCompletionEvent.java
*

/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkAlpnSslEngine.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ocsp/package-info.java

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/StacklessSSLHandshakeException.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/EnhancingX509ExtendedTrustManager.java

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/PcapWriter.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/PcapWriteHandler.java
*

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/PcapHeaders.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/TCPpacket.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/UDPPacket.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/pcap/IPPacket.java

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/logging/package-info.java
*

/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/package-info.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/IdleStateEvent.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedStream.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/package-info.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/WriteTimeoutException.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/package-info.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/IdleState.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/package-info.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedInput.java
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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/IdleStateHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedNioStream.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/TimeoutException.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/logging/LogLevel.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/ReadTimeoutException.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedNioFile.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/NotSslRecordException.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/timeout/WriteTimeoutHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/stream/ChunkedFile.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/logging/LoggingHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslHandler.java
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```

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```
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jar/io/netty/handler/ssl/OpenSslEngineMap.java
```

```
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java
```

```
*
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ipfilter/UniqueIpFilter.java
```

```
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/SslContext.java
```

```
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslEngine.java
```

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslApplicationProtocolNegotiator.java
```

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemReader.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/IpFilterRule.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SslProvider.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/RuleBasedIpFilter.java

*

/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslServerContext.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JettyAlpnSslEngine.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/SupportedCipherSuiteFilter.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/OpenJdkSelfSignedCertGenerator.java

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/CipherSuiteConverter.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/LazyX509Certificate.java

*

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/Java7SslParametersUtils.java

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/IpFilterRuleType.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/package-info.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/JdkBaseApplicationProtocolNegotiator.java

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ipfilter/AbstractRemoteAddressFilter.java

* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-

jar/io/netty/handler/ssl/JdkSslClientContext.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
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/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/util/ThreadLocalInsecureRandom.java
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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionStats.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/util/SimpleTrustManagerFactory.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/ApplicationProtocolConfig.java
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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
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jar/io/netty/handler/ssl/ApplicationProtocolUtil.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/util/BouncyCastleSelfSignedCertGenerator.java
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jar/io/netty/handler/ssl/util/InsecureTrustManagerFactory.java
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jar/io/netty/handler/ssl/JdkApplicationProtocolNegotiator.java
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jar/io/netty/handler/ipfilter/IpSubnetFilterRule.java
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jar/io/netty/handler/ssl/OpenSslContext.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslSessionContext.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslClientContext.java

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* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemX509Certificate.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/flush/package-info.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemEncoded.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/Java8SslUtils.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslCertificateException.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslClientContext.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemValue.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslEngine.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/PemPrivateKey.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslContext.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslServerContext.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/util/X509TrustManagerWrapper.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/flow/package-info.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/OpenSslKeyMaterialManager.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-jar/io/netty/handler/ssl/DelegatingSslContext.java

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jar/io/netty/handler/traffic/package-info.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/traffic/ChannelTrafficShapingHandler.java
*
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jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java
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jar/io/netty/handler/ssl/ExtendedOpenSslSession.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslCachingKeyMaterialProvider.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/SignatureAlgorithmConverter.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslSession.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslPrivateKey.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslCachingX509KeyManagerFactory.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslKeyMaterialProvider.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslX509KeyManagerFactory.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/DefaultOpenSslKeyMaterial.java
*
/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslKeyMaterial.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
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jar/io/netty/handler/ssl/util/TrustManagerFactoryWrapper.java
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jar/io/netty/handler/ssl/util/KeyManagerFactoryWrapper.java
*

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/opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/OpenSslPrivateKeyMethod.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/address/DynamicAddressConnectHandler.java
* /opt/cola/permits/1824197368_1697526507.6772025/0/netty-handler-4-1-100-final-sources-
jar/io/netty/handler/ssl/util/SimpleKeyManagerFactory.java
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jar/io/netty/handler/ssl/PseudoRandomFunction.java
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jar/io/netty/handler/ssl/util/X509KeyManagerWrapper.java
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jar/io/netty/handler/ssl/SslMasterKeyHandler.java
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sources-jar/netty_unix_util.h
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sources-jar/io/netty/channel/unix/ErrorsStaticallyReferencedJniMethods.java
*
```

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/opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-
jar/io/netty/channel/unix/Limits.java
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sources-jar/netty_unix_limits.h
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sources-jar/io/netty/channel/unix/SocketWritableByteChannel.java
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* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-
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* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/Socket.java
*
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* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty_unix_jni.h

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* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty_unix.c

* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/netty_unix.h

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* /opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/IntegerUnixChannelOption.java
*
/opt/cola/permits/1824197187_1697526505.2585757/0/netty-transport-native-unix-common-4-1-100-final-sources-jar/io/netty/channel/unix/RawUnixChannelOption.java
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1.444 netty-transport-classes-epoll

4.1.100.Final

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 */
/**
 * Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.
 */
/**
 * Set the {@code TCP_QUICKACK} option on the socket.
 * See https://linux.die.net/man/7/tcp TCP_QUICKACK
 * for more details.
 */
```

Found in path(s):

```
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-jar/io/netty/channel/epoll/EpollSocketChannelConfig.java
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jar/io/netty/channel/epoll/AbstractEpollChannel.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollSocketChannel.java
*
/opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollServerSocketChannel.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/Epoll.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollTcpInfo.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollDatagramChannel.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/NativeDatagramPacketArray.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollEventLoopGroup.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/package-info.java
*
/opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollEventLoop.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
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jar/io/netty/channel/epoll/SegmentedDatagramPacket.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollDomainDatagramChannelConfig.java
*

/opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
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/**
 * Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.
*/
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* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
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* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollDomainSocketChannelConfig.java
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/opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollServerDomainSocketChannel.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/AbstractEpollStreamChannel.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollMode.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/TcpMd5Util.java
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jar/io/netty/channel/epoll/EpollServerChannelConfig.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollDomainSocketChannel.java
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/opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollEventArray.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollRecvByteAllocatorStreamingHandle.java
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jar/io/netty/channel/epoll/EpollChannelConfig.java
* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-
jar/io/netty/channel/epoll/EpollRecvByteAllocatorHandle.java
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* /opt/cola/permits/1824197247_1697526509.5122175/0/netty-transport-classes-epoll-4-1-100-final-sources-jar/io/netty/channel/epoll/LinuxSocket.java

1.445 netty-codec-http 4.1.100.Final

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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/HttpScheme.java

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/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/cookie/CookieUtil.java

* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/cookie/DefaultCookie.java

* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/cookie/ServerCookieDecoder.java
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/CookieUtil.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/HttpExpectationFailedEvent.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/cookie/Cookie.java
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/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/cookie/ServerCookieEncoder.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/EmptyHttpHeaders.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/cookie/CookieEncoder.java

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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/compression/PerMessageDeflateServerExtensionHandshaker.java
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jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtension.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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jar/io/netty/handler/codec/http/HttpMessageUtil.java
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jar/io/netty/handler/codec/http/HttpStatusClass.java
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/websocketx/extensions/compression/package-info.java
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jar/io/netty/handler/codec/http/websocketx/extensions/compression/DeflateFrameClientExtensionHandshaker.java
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jar/io/netty/handler/codec/spdy/SpdyFrameCodec.java
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jar/io/netty/handler/codec/http/ClientCookieEncoder.java
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jar/io/netty/handler/codec/http/websocketx/extensions/package-info.java
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jar/io/netty/handler/codec/http/HttpHeaderNames.java
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/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketClientExtensionHandshaker.java

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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/spdy/SpdyProtocolException.java
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocketClientProtocolConfig.java

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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/websocketx/extensions/WebSocketExtensionFilterProvider.java

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/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketCloseStatus.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket00FrameDecoder.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker13.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/websocketx/CorruptedWebSocketFrameException.java
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jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshakerFactory.java
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jar/io/netty/handler/codec/http/websocketx/WebSocketDecoderConfig.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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*
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/TooLongHttpContentException.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/HttpHeaderValidationUtil.java

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jar/io/netty/handler/codec/http/ReadOnlyHttpHeaders.java
*
```

```
/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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jar/io/netty/handler/codec/http/FullHttpRequest.java
*
/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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jar/io/netty/handler/codec/spdy/DefaultSpdyWindowUpdateFrame.java
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jar/io/netty/handler/codec/spdy/SpdyHttpCodec.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocketFrameEncoder.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/spdy/SpdyHeaderBlockRawEncoder.java
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jar/io/netty/handler/codec/spdy/SpdyRstStreamFrame.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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jar/io/netty/handler/codec/spdy/SpdyPingFrame.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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jar/io/netty/handler/codec/spdy/DefaultSpdyPingFrame.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/spdy/SpdyCodecUtil.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-jar/io/netty/handler/codec/http/ComposedLastHttpContent.java
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/opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/HttpResponseStatus.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/DefaultHttpMessage.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/HttpResponseEncoder.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/HttpRequestDecoder.java
* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
jar/io/netty/handler/codec/http/CookieDecoder.java
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jar/io/netty/handler/codec/http/HttpMessage.java
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jar/io/netty/handler/codec/rtsp/RtspResponseDecoder.java
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* /opt/cola/permits/1824197347_1697526480.4248974/0/netty-codec-http-4-1-100-final-sources-
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jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker08.java

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Upstream-Name: liblz4

Upstream-Contact: Yann Collet <Cyan4973@github.com>

Source: <https://github.com/lz4/lz4>

Files: *

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AUTHORS File Information

Main Author

Marti Maria

Contributors

Bob Friesenhahn

Kai-Uwe Behrmann

Stuart Nixon

Jordi Vilar

Richard Hughes

Auke Nauta

Chris Evans (Google)

Lorenzo Ridolfi

Robin Watts (Artifex)

Shawn Pedersen

Andrew Brygin

Samuli

Suominen
Florian Hch
Aurelien Jarno
Claudiu Cebuc
Michael Vhrel (Artifex)
Michal Cihar
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xwd v1.0.7

xwd utility

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Behdad Esfahbod
David Corbett
David Turner
Ebrahim Byagowi
Garret Rieger
Jonathan Kew
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Mesa 3-D Graphics Library v21.0.3

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Ajay Joshi <jaj@google.com>
Balzs Dn <balazs.dan@gmail.com>
Benoit Sigoure <tsuna@google.com>
Bharat Mediratta <bharat@menalto.com>
Bogdan Piloca <boo@google.com>
Chandler Carruth <chandlerc@google.com>
Chris Prince <cprince@google.com>
Chris Taylor <taylorc@google.com>
Dan Egnor <egnor@google.com>
Dave MacLachlan <dmaclach@gmail.com>
David Anderson <danderson@google.com>
Dean Sturtevant
Eric Roman <eroman@chromium.org>
Gene Volovich <gv@cite.com>
Hady Zalek <hady.zalek@gmail.com>
Hal Burch <gmock@hburch.com>
Jeffrey Yasskin <jyasskin@google.com>
Jim Keller <jimkeller@google.com>
Joe Walnes <joe@truemesh.com>
Jon Wray <jwray@google.com>
Ji Sigursson <joi@google.com>
Keir Mierle <mierle@gmail.com>
Keith Ray <keith.ray@gmail.com>
Kenton Varda

<kenton@google.com>
Kostya Serebryany <kcc@google.com>
Krystian Kuzniarek <krystian.kuzniarek@gmail.com>
Lev Makhlis
Manuel Klimek <klimek@google.com>
Mario Tanev <radix@google.com>
Mark Paskin
Markus Heule <markus.heule@gmail.com>
Matthew Simmons <simmonmt@acm.org>
Mika Raento <mikie@iki.fi>
Mike Bland <mbland@google.com>
Mikls Fazekas <mfazekas@szemafor.com>
Neal Norwitz <nnorwitz@gmail.com>
Nermin Ozkiranartli <nermin@google.com>
Owen Carlsen <ocarlsen@google.com>
Paneendra Ba <paneendra@google.com>
Pasi Valminen <pasi.valminen@gmail.com>
Patrick Hanna <phanna@google.com>
Patrick Riley <pfr@google.com>
Paul Menage <menage@google.com>
Peter Kaminski <piotrk@google.com>
Piotr Kaminski <piotrk@google.com>
Preston Jackson <preston.a.jackson@gmail.com>
Rainer Klaffenboeck <rainer.klaffenboeck@dynatrace.com>
Russ Cox <rsc@google.com>
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Sverre Sundsdal <sundsda@gmail.com>
Takeshi Yoshino <tyoshino@google.com>
Tracy
Bialik <tracy@pentad.com>
Vadim Berman <vadimb@google.com>
Vlad Losev <vladl@google.com>
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Ajay Joshi <jaj@google.com>

Balzs Dn <balazs.dan@gmail.com>
Benoit Sigoure <tsuna@google.com>
Bharat Mediratta <bharat@menalto.com>
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Dan Egnor <egnor@google.com>
Dave MacLachlan <dmaclach@gmail.com>
David Anderson <danderson@google.com>
Dean Sturtevant
Eric Roman <eroman@chromium.org>
Gene Volovich <gv@cite.com>
Hady Zalek <hady.zalek@gmail.com>
Hal Burch <gmock@hburch.com>
Jeffrey Yasskin <jyasskin@google.com>
Jim Keller <jimkeller@google.com>
Joe Walnes <joe@truemesh.com>
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Keir Mierle <mierle@gmail.com>
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<kenton@google.com>
Kostya Serebryany <kcc@google.com>
Krystian Kuzniarek <krystian.kuzniarek@gmail.com>
Lev Makhlis
Manuel Klimek <klimek@google.com>
Mario Tanev <radix@google.com>
Mark Paskin
Markus Heule <markus.heule@gmail.com>
Matthew Simmons <simmonmt@acm.org>
Mika Raento <mikie@iki.fi>
Mike Bland <mbland@google.com>
Mikls Fazekas <mfazekas@szemafor.com>
Neal Norwitz <nnorwitz@gmail.com>
Nermin Ozkiranartli <nermin@google.com>
Owen Carlsen <ocarlsen@google.com>
Paneendra Ba <paneendra@google.com>
Pasi Valminen <pasi.valminen@gmail.com>
Patrick Hanna <phanna@google.com>
Patrick Riley <pfr@google.com>
Paul Menage <menage@google.com>
Peter Kaminski <piotrk@google.com>
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Preston Jackson <preston.a.jackson@gmail.com>
Rainer Klaffenboeck <rainer.klaffenboeck@dynatrace.com>
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Takeshi Yoshino <tyoshino@google.com>
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////

ca-legacy(8)

=====

:doctype: manpage

:man source: ca-legacy

NAME

ca-legacy - Manage the system configuration for legacy CA certificates

SYNOPSIS

ca-legacy ['COMMAND']

DESCRIPTION

ca-legacy(8) is used to include or exclude a set of legacy Certificate Authority (CA) certificates in the system's list of trusted CA certificates.

The list of CA certificates and trust flags included in the ca-certificates package are based on the decisions made by Mozilla.org according to the Mozilla CA policy.

Occasionally, removal or distrust decisions made by Mozilla.org might be incompatible with the requirements or limitations of some applications that also use the CA certificates list in the Linux environment.

The ca-certificates package might keep some CA certificates included and trusted by default, as long as it is seen necessary by the maintainers, despite the fact that they have been removed by Mozilla. These certificates are called legacy CA certificates.

The general requirements to keep legacy CA certificates included and trusted might change over time, for example if functional limitations of software packages have been resolved. Future versions of the ca-certificates package might reduce the set of legacy CA certificates that are included and trusted by default.

The ca-legacy(8) command can be used to override the default behaviour.

The mechanisms to individually trust or distrust CA certificates as described in update-ca-trust(8) still apply.

COMMANDS

check::

The current configuration will be shown.

default::

Configure the system to use the default configuration, as recommended by the package maintainers.

disable::

Configure the system to explicitly disable legacy CA certificates.

Using this configuration, the system will use the set of included and trusted CA certificates as released by Mozilla.

***install*::**

The configuration file will be read and the system configuration will be set accordingly. This command is executed automatically during upgrades of the ca-certificates package.

FILES

/etc/pki/ca-trust/ca-legacy.conf::

A configuration file that will be used and modified by the ca-legacy command.

The contents of the configuration file will be read on package upgrades.

AUTHOR

Written by Kai Engert.

Found in path(s):

* /opt/cola/permits/1828010211_1697890214.5470614/0/ca-certificates-2023.2.60_v7.0.306-72.el7_9.src.rpm-cosix-expand-archive-byEyruxa/ca-legacy.8.txt

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update-ca-trust(8)

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:doctype: manpage

:man source: update-ca-trust

NAME

update-ca-trust - manage consolidated and dynamic configuration of CA

certificates and associated trust

SYNOPSIS

`*update-ca-trust* ['COMMAND']`

DESCRIPTION

update-ca-trust(8) is used to manage a consolidated and dynamic configuration feature of Certificate Authority (CA) certificates and associated trust.

The feature is available for new applications that read the consolidated configuration files found in the `/etc/pki/ca-trust/extracted` directory or that load the PKCS#11 module `p11-kit-trust.so`

Parts of the new feature are also provided in a way to make it useful for legacy applications.

Many legacy applications expect CA certificates and trust configuration in a fixed location, contained in files with particular path and name, or by referring to a classic PKCS#11 trust module provided by the NSS cryptographic library.

The dynamic configuration feature provides functionally compatible replacements for classic configuration files and for the classic NSS trust module named `libnssckbi`.

In order to enable legacy applications, that read the classic files or access the classic module, to make use of the new consolidated and dynamic configuration feature, the classic filenames have been changed to symbolic links. The symbolic links refer to dynamically created and consolidated output stored below the `/etc/pki/ca-trust/extracted` directory hierarchy.

The output is produced using the `'update-ca-trust'` command (without parameters), or using the `'update-ca-trust extract'` command. In order to produce the output, a flexible set of source configuration is read, as described in section `<<sourceconf,SOURCE CONFIGURATION>>`.

In addition, the classic PKCS#11 module is replaced with a new PKCS#11 module (`p11-kit-trust.so`) that dynamically reads the same source configuration.

[[sourceconf]]

SOURCE CONFIGURATION

The dynamic configuration feature uses several source directories that will be scanned for any number of source files. *It is important to select the correct subdirectory for adding files, as the subdirectory defines how contained certificates will be trusted or distrusted, and which file formats are read.*

Files in *subdirectories below the directory hierarchy /usr/share/pki/ca-trust-source/* contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a *low priority*.

Files in *subdirectories below the directory hierarchy /etc/pki/ca-trust/source/* contain CA certificates and trust settings in the PEM file format. The trust settings found here will be interpreted with a *high priority*.

.You may use the following rules of thumb to decide, whether your configuration files should be added to the /etc or rather to the /usr directory hierarchy:

* If you are manually adding a configuration file to a system, you probably want it to override any other default configuration, and you most likely should add it to the respective subdirectory in the /etc hierarchy.

* If you are creating a package that provides additional root CA certificates, that is intended for distribution to several computer systems, but you still want to allow the administrator to override your list, then your package should add your files to the respective subdirectory in the /usr hierarchy.

* If you are creating a package that is supposed to override the default system trust settings, that is intended for distribution to several computer systems, then your package should install the files to the respective subdirectory in the /etc hierarchy.

.*QUICK HELP 1*:. To add a certificate in the simple PEM or DER file formats to the list of CAs trusted on the system:

* add it as a new file to directory /etc/pki/ca-trust/source/anchors/

* run 'update-ca-trust extract'

.*QUICK HELP 2*:. If your certificate is in the extended BEGIN TRUSTED file format (which may contain distrust/blacklist trust flags, or trust flags for usages other than TLS) then:

* add it as a new file to directory /etc/pki/ca-trust/source/

* run 'update-ca-trust extract'

.In order to offer simplicity and flexibility, the way certificate files are treated depends on the subdirectory they are installed to.

* simple trust anchors subdirectory: /usr/share/pki/ca-trust-source/anchors/ or /etc/pki/ca-trust/source/anchors/
*

simple blacklist (distrust) subdirectory: /usr/share/pki/ca-trust-source/blacklist/ or /etc/pki/ca-trust/source/blacklist/

* extended format directory: /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/

.In the main directories /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ you may install one or multiple

files in the following file formats:

- * certificate files that include trust flags, in the BEGIN/END TRUSTED CERTIFICATE file format (any file name), which have been created using the openssl x509 tool and the -addreject -addtrust options.

Bundle files with multiple certificates are supported.

- * files in the p11-kit file format using the .p11-kit file name extension, which can (e.g.) be used to distrust certificates based on serial number and issuer name, without having the full certificate available.

(This is currently an undocumented format, to be extended later.

For examples of the supported formats, see the files shipped with the ca-certificates package.)

- * certificate files without trust flags in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format (any file name). Such files will be added with neutral trust, neither trusted nor distrusted.

They will simply be known to the system, which might be helpful to assist cryptographic software in constructing chains of certificates.

(If you want a CA certificate in these file formats to be trusted, you should remove it from this directory and move it to the ./anchors subdirectory instead.)

In the anchors subdirectories /usr/share/pki/ca-trust-source/anchors/ or /etc/pki/ca-trust/source/anchors/

you may install one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format.

Each certificate will be treated as *trusted* for all purposes.

In the blacklist subdirectories /usr/share/pki/ca-trust-source/blacklist/ or /etc/pki/ca-trust/source/blacklist/

you may install

one or multiple certificates in either the DER file format or in the PEM (BEGIN/END CERTIFICATE) file format.

Each certificate will be treated as *distrusted* for all purposes.

Please refer to the x509(1) manual page for the documentation of the BEGIN/END CERTIFICATE and BEGIN/END TRUSTED CERTIFICATE file formats.

Applications that rely on a static file for a list of trusted CAs may load one of the files found in the /etc/pki/ca-trust/extracted directory. After modifying any file in the /usr/share/pki/ca-trust-source/ or /etc/pki/ca-trust/source/ directories or in any of their subdirectories, or after adding a file, it is necessary to run the 'update-ca-trust extract' command, in order to update the consolidated files in /etc/pki/ca-trust/extracted/ .

Applications that load the classic PKCS#11 module using filename libnssckbi.so (which has been converted into a symbolic link pointing to the new module) and any application capable of loading PKCS#11 modules and loading p11-kit-trust.so,

will benefit from
the dynamically merged set of certificates and trust information stored in the
/usr/share/pki/ca-trust-source/ and /etc/pki/ca-trust/source/ directories.

[[extractconf]]

EXTRACTED CONFIGURATION

The directory /etc/pki/ca-trust/extracted/ contains generated CA certificate
bundle files which are created and updated, based on the <<sourceconf,SOURCE CONFIGURATION>>
by running the 'update-ca-trust extract' command.

If your application isn't able to load the PKCS#11 module p11-kit-trust.so,
then you can use these files in your application to load a list of global
root CA certificates.

Please never manually edit the files stored in this directory,
because your changes will be lost and the files automatically overwritten,
each time the 'update-ca-trust extract' command gets executed.

In order to install new trusted or distrusted certificates,
please rather install them in the respective subdirectory below the
/usr/share/pki/ca-trust-source/
or /etc/pki/ca-trust/source/
directories, as described in the <<sourceconf,SOURCE CONFIGURATION>> section.

The directory /etc/pki/ca-trust/extracted/java/ contains
a CA certificate bundle in the java keystore file format.
Distrust information cannot be represented in this file format,
and distrusted certificates are missing from these files.
File cacerts contains CA certificates trusted for TLS server authentication.

The directory /etc/pki/ca-trust/extracted/openssl/ contains
CA certificate bundle files in the extended BEGIN/END TRUSTED CERTIFICATE file format,
as described in the x509(1) manual page.
File ca-bundle.trust.crt contains the full set of all trusted
or distrusted certificates, including the associated trust flags.

The directory /etc/pki/ca-trust/extracted/pem/ contains
CA certificate bundle files in the simple BEGIN/END CERTIFICATE file format,
as described in the x509(1) manual page.
Distrust information cannot be represented in this file format,
and distrusted
certificates are missing from these files.
File tls-ca-bundle.pem contains CA certificates
trusted for TLS server authentication.
File email-ca-bundle.pem contains CA certificates
trusted for E-Mail protection.

File `objsign-ca-bundle.pem` contains CA certificates trusted for code signing.

COMMANDS

(absent/empty command)::

Same as the `*extract*` command described below. (However, the command may print fewer warnings, as this command is being run during rpm package installation, where non-fatal status output is undesired.)

`*extract*::`

Instruct `update-ca-trust` to scan the `<<sourceconf,SOURCE CONFIGURATION>>` and produce updated versions of the consolidated configuration files stored below the `/etc/pki/ca-trust/extracted` directory hierarchy.

FILES

`/etc/pki/tls/certs/ca-bundle.crt::`

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the simple BEGIN/END CERTIFICATE file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the `update-ca-trust` command.

`/etc/pki/tls/certs/ca-bundle.trust.crt::`

Classic filename, file contains a list of CA certificates in the extended BEGIN/END TRUSTED CERTIFICATE file format, which includes trust (and/or distrust) flags specific to certificate usage.

This file is a symbolic link that refers to the consolidated output created by the `update-ca-trust` command.

`/etc/pki/java/cacerts::`

Classic filename, file contains a list of CA certificates trusted for TLS server authentication usage, in the Java keystore file format, without distrust information.

This file is a symbolic link that refers to the consolidated output created by the `update-ca-trust` command.

`/usr/share/pki/ca-trust-source::`

Contains multiple, low priority source configuration files as explained in section `<<sourceconf,SOURCE CONFIGURATION>>`. Please pay attention to the specific meanings of the respective subdirectories.

`/etc/pki/ca-trust/source::`

Contains

multiple, high priority source configuration files as explained in section `<<sourceconf,SOURCE CONFIGURATION>>`. Please pay attention to the specific meanings of the respective subdirectories.

`/etc/pki/ca-trust/extracted::`

Contains consolidated and automatically generated configuration files for consumption by applications, which are created using the `'update-ca-trust extract'` command. Don't edit files in this directory, because they will be overwritten.

See section `<<extractconf,EXTRACTED CONFIGURATION>>` for additional details.

AUTHOR

Written by Kai Engert and Stef Walter.

Found in path(s):

* /opt/cola/permits/1828010211_1697890214.5470614/0/ca-certificates-2023.2.60_v7.0.306-72.el7_9.src.rpm-cosi-expand-archive-byEyruxa/update-ca-trust.8.txt

No license file was found, but licenses were detected in source scan.

#

This Source Code Form is subject to the terms of the Mozilla Public
License, v. 2.0. If a copy of the MPL was not distributed with this
file, You can obtain one at <http://mozilla.org/MPL/2.0/>.

#

certdata.txt

#

This file contains the object definitions for the certs and other
information "built into" NSS.

#

Object definitions:

#

Certificates

#

-- Attribute -- -- type -- -- value --

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 (varies)

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT DER+base64 (varies)

CKA_ID byte array (varies)

#

 CKA_ISSUER DER+base64 (varies)

CKA_SERIAL_NUMBER DER+base64 (varies)

CKA_VALUE DER+base64 (varies)

CKA_NSS_EMAIL ASCII7 (unused here)

CKA_NSS_SERVER_DISTRICT_AFTER DER+base64 (varies)

CKA_NSS_EMAIL_DISTRICT_AFTER DER+base64 (varies)

#

Trust

#

-- Attribute -- -- type -- -- value --

CKA_CLASS CK_OBJECT_CLASS CKO_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```

# CKA_MODIFIABLE      CK_BBOOL      CK_FALSE
# CKA_LABEL           UTF8          (varies)
# CKA_ISSUER          DER+base64    (varies)
# CKA_SERIAL_NUMBER   DER+base64    (varies)
# CKA_CERT_HASH       binary+base64 (varies)
# CKA_EXPIRES         CK_DATE
(not used here)
# CKA_TRUST_DIGITAL_SIGNATURE CK_TRUST      (varies)
# CKA_TRUST_NON_REPUDIATION  CK_TRUST      (varies)
# CKA_TRUST_KEY_ENCIPHERMENT CK_TRUST      (varies)
# CKA_TRUST_DATA_ENCIPHERMENT CK_TRUST      (varies)
# CKA_TRUST_KEY_AGREEMENT    CK_TRUST      (varies)
# CKA_TRUST_KEY_CERT_SIGN    CK_TRUST      (varies)
# CKA_TRUST_CRL_SIGN         CK_TRUST      (varies)
# CKA_TRUST_SERVER_AUTH      CK_TRUST      (varies)
# CKA_TRUST_CLIENT_AUTH      CK_TRUST      (varies)
# CKA_TRUST_CODE_SIGNING     CK_TRUST      (varies)
# CKA_TRUST_EMAIL_PROTECTION CK_TRUST      (varies)
# CKA_TRUST_IPSEC_END_SYSTEM CK_TRUST      (varies)
# CKA_TRUST_IPSEC_TUNNEL     CK_TRUST      (varies)
# CKA_TRUST_IPSEC_USER       CK_TRUST      (varies)
# CKA_TRUST_TIME_STAMPING    CK_TRUST      (varies)
# CKA_TRUST_STEP_UP_APPROVED CK_BBOOL      (varies)
# (other
trust attributes can be defined)
#

#

# The object to tell NSS that this is a root list and we don't
# have to go looking for others.
#
BEGINDATA
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_BUILTIN_ROOT_LIST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Mozilla Builtin Roots"

#

# Certificate "GlobalSign Root CA"
#
# Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
# Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94
# Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Tue Sep 01 12:00:00 1998
# Not Valid After : Fri Jan 28 12:00:00 2028
# Fingerprint (SHA-256):
EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99

```

Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign
Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL
\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\025\113\132\303\224

END

CKA_VALUE MULTILINE_OCTAL
\060\202\003\165\060\202\002\135\240\003\002\001\002\002\013\004
\000\000\000\000\001\025\113\132\303\224\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\127\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004
\012\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166
\055\163\141\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\033\060\031\006\003\125\004\003\023\022
\107\154\157\142\141\154\123\151\147\156\040\122\157\157\164\040
\103\101\060\036\027\015\071\070\060\071\060\061\061\062\060\060
\060\060\132\027\015\062\070\060\061\062\070\061\062\060\060\060
\060\132\060\127\061\013\060\011\006\003\125\004\006\023\002\102
\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142
\141\154\123\151\147\156\040\156\166\055\163\141\061\020\060\016
\006\003\125\004\013\023\007\122\157\157\164\040\103\101\061\033
\060\031\006\003\125\004\003\023\022\107\154\157\142\141\154\123
\151\147\156\040\122\157\157\164\040\103\101\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\332\016\346\231
\215\316\243\343\117\212\176\373\361\213\203\045\153\352\110\037

\361\052\260\271\225\021\004\275\360\143\321\342\147\146\317\034
\335\317\033\110\053\356\215\211\216\232\257\051\200\145\253\351
\307\055\022\313\253\034\114\160\007\241\075\012\060\315\025\215
\117\370\335\324\214\120\025\034\357\120\356\304\056\367\374\351
\122\362\221\175\340\155\325\065\060\216\136\103\163\362\101\351
\325\152\343\262\211\072\126\071\070\157\006\074\210\151\133\052
\115\305\247\124\270\154\211\314\233\371\074\312\345\375\211\365
\022\074\222\170\226\326\334\164\156\223\104\141\321\215\307\106
\262\165\016\206\350\031\212\325\155\154\325\170\026\225\242\351
\310\012\070\353\362\044\023\117\163\124\223\023\205\072\033\274
\036\064\265\213\005\214\271\167\213\261\333\037\040\221\253\011
\123\156\220\316\173\067\164\271\160\107\221\042\121\143\026\171
\256\261\256\101\046\010\310\031\053\321\106\252\110\326\144\052
\327\203\064\377\054\052\301\154\031\103\112\007\205\347\323\174
\366\041\150\357\352\362\122\237\177\223\220\317\002\003\001\000
\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\140\173\146\032\105\015\227\312\211\120\057\175\004\315\064
\250\377\374\375\113\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\326\163\347\174\117\166\320
\215\277\354\272\242\276\064\305\050\062\265\174\374\154\234\054
\053\275\011\236\123\277\153\136\252\021\110\266\345\010\243\263
\312\075\141\115\323\106\011\263\076\303\240\343\143\125\033\362
\272\357\255\071\341\103\271\070\243\346\057\212\046\073\357\240
\120\126\371\306\012\375\070\315\304\013\160\121\224\227\230\004
\337\303\137\224\325\025\311\024\101\234\304\135\165\144\025\015
\377\125\060\354\206\217\377\015\357\054\271\143\106\366\252\374
\337\274\151\375\056\022\110\144\232\340\225\360\246\357\051\217
\001\261\025\265\014\035\245\376\151\054\151\044\170\036\263\247
\034\161\142\356\312\310\227\254\027\135\212\302\370\107\206\156
\052\304\126\061\225\320\147\211\205\053\371\154\246\135\106\235
\014\252\202\344\231\121\335\160\267\333\126\075\141\344\152\341
\134\326\366\376\075\336\101\314\007\256\143\122\277\123\123\364
\053\351\307\375\266\367\202\137\205\322\101\030\333\201\263\004
\034\305\037\244\200\157\025\040\311\336\014\210\012\035\326\146
\125\342\374\110\311\051\046\151\340

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "GlobalSign Root CA"

Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94

Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

Not Valid Before: Tue Sep 01 12:00:00 1998

```

#
Not Valid After : Fri Jan 28 12:00:00 2028
# Fingerprint (SHA-256):
EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99
# Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\261\274\226\213\324\364\235\142\052\250\232\201\362\025\001\122
\244\035\202\234
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\076\105\122\025\011\121\222\341\267\135\067\237\261\207\051\212
END
CKA_ISSUER MULTILINE_OCTAL
\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003
\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031
\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\025\113\132\303\224
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Verisign Class 1 Public Primary Certification Authority - G3"
#
# Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
# Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4
# Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
# Not Valid Before: Fri Oct 01 00:00:00 1999
# Not Valid After : Wed Jul 16 23:59:59 2036
# Fingerprint (SHA-256):
CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65
#

```

Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5

For Email Distrust After: Wed Aug 31 00:00:00 2022

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
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\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110
\316\261\244

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\032\060\202\003\002\002\021\000\213\133\165\126\204
\124\205\013\000\317\257\070\110\316\261\244\060\015\006\011\052

\206\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111
\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145
\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164
\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050
\143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156
\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164
\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171
\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123
\151\147\156\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060
\061\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066
\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012
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\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123
\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162
\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040
\061\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111
\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060
\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156
\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143\040
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\335\204\324\271\264\371\247\330\363\004\170
\234\336\075\334\154\023\026\331\172\335\044\121\146\300\307\046
\131\015\254\006\010\302\224\321\063\037\360\203\065\037\156\033
\310\336\252\156\025\116\124\047\357\304\155\032\354\013\343\016
\360\104\245\127\307\100\130\036\243\107\037\161\354\140\366\155
\224\310\030\071\355\376\102\030\126\337\344\114\111\020\170\116
\001\166\065\143\022\066\335\146\274\001\004\066\243\125\150\325
\242\066\011\254\253\041\046\124\006\255\077\312\024\340\254\312
\255\006\035\225\342\370\235\361\340\140\377\302\177\165\053\114
\314\332\376\207\231\041\352\272\376\076\124\327\322\131\170\333
\074\156\317\240\023\000\032\270\047\241\344\276\147\226\312\240
\305\263\234\335\311\165\236\353\060\232\137\243\315\331\256\170
\031\077\043\351\134\333\051\275\255\125\310\033\124\214\143\366
\350\246\352\307\067\022\134\243\051\036\002\331\333\037\073\264
\327\017\126\107\201\025\004\112\257\203\047\321\305\130\210\301
\335\366\252\247\243\030\332\150\252\155\021\121\341\277\145\153
\237\226\166\321\075\002\003\001\000\001\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\253\146


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\215\327\263\272\307\232\266\346\125\320\005\361\237\061\215\132
\252\331\252\106\046\017\161\355\245\255\123\126\142\001\107\052
\104\351\376\077\164\013\023\233\271\364\115\033\262\321\137\262
\266\322\210\134\263\237\315\313\324\247\331\140\225\204\072\370
\301\067\035\141\312\347\260\305\345\221\332\124\246\254\061\201
\256\227\336\315\010\254\270\300\227\200\177\156\162\244\347\151
\023\225\145\037\304\223\074\375\171\217\004\324\076\117\352\367
\236\316\315\147\174\117\145\002\377\221\205\124\163\307\377\066
\367\206\055\354\320\136\117\377\021\237\162\006\326\270\032\361
\114\015\046\145\342\104\200\036\307\237\343\335\350\012\332\354
\245\040\200\151\150\241\117\176\341\153\317\007\101\372\203\216
\274\070\335\260\056\021\261\153\262\102\314\232\274\371\110\042
\171\112\031\017\262\034\076\040\164\331\152\303\276\362\050\170
\023\126\171\117\155\120\352\033\260\265\127\261\067\146\130\043
\363\334\017\337\012\207\304\357\206\005\325\070\024\140\231\243
\113\336\006\226\161\054\362\333\266\037\244\357\077\356
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER MULTILINE_OCTAL

\062\062\060\070\063\061\060\060\060\060\060\060\132

END

Trust for "Verisign Class 1 Public Primary Certification Authority - G3"

Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4

Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

Not Valid Before: Fri Oct 01 00:00:00 1999

Not Valid After : Wed Jul 16 23:59:59 2036

Fingerprint (SHA-256):

CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65

Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\040\102\205\334\367\353\166\101\225\127\216\023\153\324\267\321
\351\216\106\245

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\261\107\274\030\127\321\030\240\170\055\354\161\350\052\225\163

END

CKA_ISSUER

MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110
\316\261\244

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Verisign Class 2 Public Primary Certification Authority - G3"

#

Issuer: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a

Subject: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

Not Valid Before: Fri Oct 01 00:00:00 1999

Not Valid After : Wed Jul 16 23:59:59 2036

Fingerprint (SHA-256):

92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB

Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11

#

For Email Distrust After: Wed Aug 31 00:00:00 2022

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
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\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
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\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
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END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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\133\172

END

CKA_VALUE MULTILINE_OCTAL

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\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
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\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066\062
\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023
\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061
\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123\151
\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040\061
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\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060\103
\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156\040
\103\154\141\163\163\040\062\040\120\165\142\154\151\143\040\120
\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055
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\205\052\325\220\266\315\213\240\314\062\335\267\375\100\125\262
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\074\300\215\115\103\111\035\275\351\041\222\327\146\234\267\336
\305\270\320\344\135\137\166\042\300\046\371\204\072\072\371\214
\265\373\354\140\361\350\316\004\260\310\335\247\003\217\060\363
\230\337\244\346\244\061\337\323\034\013\106\334\162\040\077\256
\356\005\074\244\063\077\013\071\254\160\170\163\113\231\053\337
\060\302\124\260\250\073\125\241\376\026\050\315\102\275\164\156
\200\333\047\104\247\316\104\135\324\033\220\230\015\036\102\224
\261\000\054\004\320\164\243\002\005\042\143\143\315\203\265\373
\301\155\142\153\151\165\375\135\160\101\271\365\277\174\337\276
\301\062\163\042\041\213\130\201\173\025\221\172\272\343\144\110

```
\260\177\373\066\045\332\225\320\361\044\024\027\335\030\200\153
\106\043\071\124\365\216\142\011\004\035\224\220\246\233\346\045
\342\102\105\252\270\220\255\276\010\217\251\013\102\030\224\317
\162\071\341\261\103\340\050\317\267\347\132\154\023\153\111\263
\377\343\030\174\211\213\063\135\254\063\327\247\371\332\072\125
\311\130\020\371\252\357\132\266\317\113\113\337\052
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER MULTILINE_OCTAL

```
\062\062\060\070\063\061\060\060\060\060\060\060\132
```

END

Trust for "Verisign Class 2 Public Primary Certification Authority - G3"

Issuer: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a

#

Subject: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

Not Valid Before: Fri Oct 01 00:00:00 1999

Not Valid After : Wed Jul 16 23:59:59 2036

Fingerprint (SHA-256):

```
92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB
```

Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\141\357\103\327\177\312\324\141\121\274\230\340\303\131\022\257
\237\353\143\021
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\370\276\304\143\042\311\250\106\164\213\270\035\036\112\053\366
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
```

```
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\141\160\313\111\214\137\230\105\051\347\260\246\331\120
\133\172
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Entrust.net Premium 2048 Secure Server CA"

#

Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.),O=Entrust.net
Serial Number: 946069240 (0x3863def8)

Subject: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.),O=Entrust.net

Not Valid Before: Fri Dec 24 17:50:51 1999

Not Valid After : Tue Jul 24 14:15:12 2029

Fingerprint (SHA-256):

6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77

Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL

UTF8 "Entrust.net Premium 2048 Secure Server CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
```

\040\050\062\060\064\070\051

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\050\062\060\064\070\051

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\004\070\143\336\370

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\052\060\202\003\022\240\003\002\001\002\002\004\070
\143\336\370\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\201\264\061\024\060\022\006\003\125\004\012\023\013
\105\156\164\162\165\163\164\056\156\145\164\061\100\060\076\006
\003\125\004\013\024\067\167\167\167\056\145\156\164\162\165\163
\164\056\156\145\164\057\103\120\123\137\062\060\064\070\040\151
\156\143\157\162\160\056\040\142\171\040\162\145\146\056\040\050
\154\151\155\151\164\163\040\154\151\141\142\056\051\061\045\060
\043\006\003\125\004\013\023\034\050\143\051\040\061\071\071\071
\040\105\156\164\162\165\163\164\056\156\145\164\040\114\151\155
\151\164\145\144\061\063\060\061\006\003\125\004\003\023\052\105
\156\164\162\165\163\164\056\156\145\164\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\050\062\060\064\070\051\060\036\027\015\071\071\061
\062\062\064\061\067\065\060\065\061\132\027\015\062\071\060\067
\062\064\061\064\061\065\061\062\132\060\201\264\061\024\060\022
\006\003\125\004\012\023\013\105\156\164\162\165\163\164\056\156
\145\164\061\100\060\076\006\003\125\004\013\024\067\167\167\167
\056\145\156\164\162\165\163\164\056\156\145\164\057\103\120\123
\137\062\060\064\070\040\151\156\143\157\162\160\056\040\142\171
\040\162\145\146\056\040\050\154\151\155\151\164\163\040\154\151
\141\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050
\143\051\040\061\071\071\071\040\105\156\164\162\165\163\164\056
\156\145\164\040\114\151\155\151\164\145\144\061\063\060\061\006
\003\125\004\003\023\052\105\156\164\162\165\163\164\056\156\145
\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040

\101\165\164\150\157\162\151\164\171\040\050\062\060\064\070\051
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\255\115\113\251\022\206\262\352\243\040\007\025\026\144\052
\053\113\321\277\013\112\115\216\355\200\166\245\147\267\170\100
\300\163\102\310\150\300\333\123\053\335\136\270\166\230\065\223
\213\032\235\174\023\072\016\037\133\267\036\317\345\044\024\036
\261\201\251\215\175\270\314\153\113\003\361\002\014\334\253\245
\100\044\000\177\164\224\241\235\010\051\263\210\013\365\207\167
\235\125\315\344\303\176\327\152\144\253\205\024\206\225\133\227
\062\120\157\075\310\272\146\014\343\374\275\270\111\301\166\211
\111\031\375\300\250\275\211\243\147\057\306\237\274\161\031\140
\270\055\351\054\311\220\166\146\173\224\342\257\170\326\145\123
\135\074\326\234\262\317\051\003\371\057\244\120\262\324\110\316
\005\062\125\212\375\262\144\114\016\344\230\007\165\333\177\337
\271\010\125\140\205\060\051\371\173\110\244\151\206\343\065\077
\036\206\135\172\172\025\275\357\000\216\025\042\124\027\000\220
\046\223\274\016\111\150\221\277\370\107\323\235\225\102\301\016
\115\337\157\046\317\303\030\041\142\146\103\160\326\325\300\007
\341\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125
\035\016\004\026\004\024\125\344\201\321\021\200\276\330\211\271
\010\243\061\371\241\044\011\026\271\160\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\073\233
\217\126\233\060\347\123\231\174\172\171\247\115\227\327\031\225
\220\373\006\037\312\063\174\106\143\217\226\146\044\372\100\033
\041\047\312\346\162\163\362\117\376\061\231\375\310\014\114\150
\123\306\200\202\023\230\372\266\255\332\135\075\361\316\156\366
\025\021\224\202\014\356\077\225\257\021\253\017\327\057\336\037
\003\217\127\054\036\311\273\232\032\104\225\353\030\117\246\037
\315\175\127\020\057\233\004\011\132\204\265\156\330\035\072\341
\326\236\321\154\171\136\171\034\024\305\343\320\114\223\073\145
\074\355\337\075\276\246\345\225\032\303\265\031\303\275\136\133
\273\377\043\357\150\031\313\022\223\047\134\003\055\157\060\320
\036\266\032\254\336\132\367\321\252\250\047\246\376\171\201\304
\171\231\063\127\272\022\260\251\340\102\154\223\312\126\336\376
\155\204\013\010\213\176\215\352\327\230\041\306\363\347\074\171
\057\136\234\321\114\025\215\341\354\042\067\314\232\103\013\227
\334\200\220\215\263\147\233\157\110\010\025\126\317\277\361\053
\174\136\232\166\351\131\220\305\174\203\065\021\145\121

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Entrust.net Premium 2048 Secure Server CA"


```
# Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.),O=Entrust.net
# Serial Number: 946069240 (0x3863def8)
# Subject: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited,OU=www.entrust.net/CPS_2048 incorp. by ref. (limits liab.),O=Entrust.net
# Not Valid Before: Fri Dec 24 17:50:51 1999
# Not Valid After : Tue Jul 24 14:15:12 2029
# Fingerprint (SHA-256):
6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77
# Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust.net Premium 2048 Secure Server CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\120\060\006\011\035\227\324\365\256\071\367\313\347\222\175\175
\145\055\064\061
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\356\051\061\274\062\176\232\346\350\265\367\121\264\064\161\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\040\105
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\050\062\060\064\070\051
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\070\143\336\370
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Baltimore CyberTrust Root"
```

```

#
# Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Serial Number: 33554617 (0x20000b9)
# Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Not Valid Before: Fri May 12 18:46:00 2000
# Not Valid After : Mon May 12 23:59:00 2025
# Fingerprint (SHA-256):
16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB
# Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Baltimore CyberTrust Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\002\000\000\271
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\167\060\202\002\137\240\003\002\001\002\002\004\002
\000\000\271\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\111
\105\061\022\060\020\006\003\125\004\012\023\011\102\141\154\164
\151\155\157\162\145\061\023\060\021\006\003\125\004\013\023\012
\103\171\142\145\162\124\162\165\163\164\061\042\060\040\006\003
\125\004\003\023\031\102\141\154\164\151\155\157\162\145\040\103
\171\142\145\162\124\162\165\163\164\040\122\157\157\164\060\036
\027\015\060\060\060\065\061\062\061\070\064\066\060\060\132\027
\015\062\065\060\065\061\062\062\063\065\071\060\060\132\060\132

```

\061\013\060\011\006\003\125\004\006\023\002\111\105\061\022\060
\020\006\003\125\004\012\023\011\102\141\154\164\151\155\157\162
\145\061\023\060\021\006\003\125\004\013\023\012\103\171\142\145
\162\124\162\165\163\164\061\042\060\040\006\003\125\004\003\023
\031\102\141\154\164\151\155\157\162\145\040\103\171\142\145\162
\124\162\165\163\164\040\122\157\157\164\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\243\004\273\042\253
\230\075\127\350\046\162\232\265\171\324\051\342\341\350\225\200
\261\260\343\133\216\053\051\232\144\337\241\135\355\260\011\005
\155\333\050\056\316\142\242\142\376\264\210\332\022\353\070\353
\041\235\300\101\053\001\122\173\210\167\323\034\217\307\272\271
\210\265\152\011\347\163\350\021\100\247\321\314\312\142\215\055
\345\217\013\246\120\322\250\120\303\050\352\365\253\045\207\212
\232\226\034\251\147\270\077\014\325\367\371\122\023\057\302\033
\325\160\160\360\217\300\022\312\006\313\232\341\331\312\063\172
\167\326\370\354\271\361\150\104\102\110\023\322\300\302\244\256
\136\140\376\266\246\005\374\264\335\007\131\002\324\131\030\230
\143\365\245\143\340\220\014\175\135\262\006\172\363\205\352\353
\324\003\256\136\204\076\137\377\025\355\151\274\371\071\066\162
\165\317\167\122\115\363\311\220\054\271\075\345\311\043\123\077
\037\044\230\041\134\007\231\051\275\306\072\354\347\156\206\072
\153\227\164\143\063\275\150\030\061\360\170\215\166\277\374\236
\216\135\052\206\247\115\220\334\047\032\071\002\003\001\000\001
\243\105\060\103\060\035\006\003\125\035\016\004\026\004\024\345
\235\131\060\202\107\130\314\254\372\010\124\066\206\173\072\265
\004\115\360\060\022\006\003\125\035\023\001\001\377\004\010\060
\006\001\001\377\002\001\003\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\003\202\001\001\000\205\014\135\216\344
\157\121\150\102\005\240\335\273\117\047\045\204\003\275\367\144
\375\055\327\060\343\244\020\027\353\332\051\051\266\171\077\166
\366\031\023\043\270\020\012\371\130\244\324\141\160\275\004\141
\152\022\212\027\325\012\275\305\274\060\174\326\351\014\045\215
\206\100\117\354\314\243\176\070\306\067\021\117\355\335\150\061
\216\114\322\263\001\164\356\276\165\136\007\110\032\177\160\377
\026\134\204\300\171\205\270\005\375\177\276\145\021\243\017\300
\002\264\370\122\067\071\004\325\251\061\172\030\277\240\052\364
\022\231\367\243\105\202\343\074\136\365\235\236\265\310\236\174
\056\310\244\236\116\010\024\113\155\375\160\155\153\032\143\275
\144\346\037\267\316\360\362\237\056\273\033\267\362\120\210\163
\222\302\342\343\026\215\232\062\002\253\216\030\335\351\020\021
\356\176\065\253\220\257\076\060\224\172\320\063\075\247\145\017
\365\374\216\236\142\317\107\104\054\001\135\273\035\265\062\322
\107\322\070\056\320\376\201\334\062\152\036\265\356\074\325\374
\347\201\035\031\303\044\102\352\143\071\251

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "Baltimore CyberTrust Root"
# Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Serial Number: 33554617
(0x20000b9)
# Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Not Valid Before: Fri May 12 18:46:00 2000
# Not Valid After : Mon May 12 23:59:00 2025
# Fingerprint (SHA-256):
16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB
# Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Baltimore CyberTrust Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\324\336\040\320\136\146\374\123\376\032\120\210\054\170\333\050
\122\312\344\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\254\266\224\245\234\027\340\327\221\122\233\261\227\006\246\344
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\003\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\002\000\000\271
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Entrust Root Certification Authority"
#
# Issuer: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US

```

```
# Serial Number: 1164660820 (0x456b5054)
# Subject: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US
# Not Valid Before: Mon Nov 27 20:23:42 2006
# Not Valid After : Fri Nov 27 20:53:42 2026
# Fingerprint (SHA-256):
73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C
#
Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\105\153\120\124
END
```

CKA_VALUE

MULTILINE_OCTAL

\060\202\004\221\060\202\003\171\240\003\002\001\002\002\004\105
\153\120\124\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\201\260\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156\164
\162\165\163\164\054\040\111\156\143\056\061\071\060\067\006\003
\125\004\013\023\060\167\167\167\056\145\156\164\162\165\163\164
\056\156\145\164\057\103\120\123\040\151\163\040\151\156\143\157
\162\160\157\162\141\164\145\144\040\142\171\040\162\145\146\145
\162\145\156\143\145\061\037\060\035\006\003\125\004\013\023\026
\050\143\051\040\062\060\060\066\040\105\156\164\162\165\163\164
\054\040\111\156\143\056\061\055\060\053\006\003\125\004\003\023
\044\105\156\164\162\165\163\164\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\060\036\027\015\060\066\061\061\062\067\062
\060\062\063\064\062\132\027\015\062\066\061\061\062\067\062\060
\065\063\064\062\132\060\201\260\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015
\105\156\164\162\165\163\164\054\040\111\156\143\056\061\071\060
\067\006\003\125\004\013\023\060\167\167\167\056\145\156\164\162
\165\163\164\056\156\145\164\057\103\120\123\040\151\163\040\151
\156\143\157\162\160\157\162\141\164\145\144\040\142\171\040\162
\145\146\145\162\145\156\143\145\061\037\060\035\006\003\125\004
\013\023\026\050\143\051\040\062\060\060\066\040\105\156\164\162
\165\163\164\054\040\111\156\143\056\061\055\060\053\006\003\125
\004\003\023\044\105\156\164\162\165\163\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\266\225\266\103\102\372\306
\155\052\157\110\337\224\114\071\127\005\356\303\171\021\101\150
\066\355\354\376\232\001\217\241\070\050\374\367\020\106\146\056
\115\036\032\261\032\116\306\321\300\225\210\260\311\377\061\213
\063\003\333\267\203\173\076\040\204\136\355\262\126\050\247\370
\340\271\100\161\067\305\313\107\016\227\052\150\300\042\225\142
\025\333\107\331\365\320\053\377\202\113\311\255\076\336\114\333
\220\200\120\077\011\212\204\000\354\060\012\075\030\315\373\375
\052\131\232\043\225\027\054\105\236\037\156\103\171\155\014\134
\230\376\110\247\305\043\107\134\136\375\156\347\036\264\366\150
\105\321\206\203\133\242\212\215\261\343\051\200\376\045\161\210
\255\276\274\217\254\122\226\113\252\121\215\344\023\061\031\350
\116\115\237\333\254\263\152\325\274\071\124\161\312\172\172\177
\220\335\175\035\200\331\201\273\131\046\302\021\376\346\223\342
\367\200\344\145\373\064\067\016\051\200\160\115\257\070\206\056
\236\177\127\257\236\027\256\353\034\313\050\041\137\266\034\330
\347\242\004\042\371\323\332\330\313\002\003\001\000\001\243\201
\260\060\201\255\060\016\006\003\125\035\017\001\001\377\004\004

\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\053\006\003\125\035\020\004\044\060\042
\200\017\062\060\060\066\061\061\062\067\062\060\062\063\064\062
\132\201\017\062\060\062\066\061\061\062\067\062\060\065\063\064
\062\132\060\037\006\003\125\035\043\004\030\060\026\200\024\150
\220\344\147\244\246\123\200\307\206\146\244\361\367\113\103\373
\204\275\155\060\035\006\003\125\035\016\004\026\004\024\150\220
\344\147\244\246\123\200\307\206\146\244\361\367\113\103\373\204
\275\155\060\035\006\011\052\206\110\206\366\175\007\101\000\004
\020\060\016\033\010\126\067\056\061\072\064\056\060\003\002\004
\220\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\223\324\060\260\327\003\040\052\320\371\143
\350\221\014\005\040\251\137\031\312\173\162\116\324\261\333\320
\226\373\124\132\031\054\014\010\367\262\274\205\250\235\177\155
\073\122\263\052\333\347\324\204\214\143\366\017\313\046\001\221
\120\154\364\137\024\342\223\164\300\023\236\060\072\120\343\264
\140\305\034\360\042\104\215\161\107\254\310\032\311\351\233\232
\000\140\023\377\160\176\137\021\115\111\033\263\025\122\173\311
\124\332\277\235\225\257\153\232\330\236\351\361\344\103\215\342
\021\104\072\277\257\275\203\102\163\122\213\252\273\247\051\317
\365\144\034\012\115\321\274\252\254\237\052\320\377\177\177\332
\175\352\261\355\060\045\301\204\332\064\322\133\170\203\126\354
\234\066\303\046\342\021\366\147\111\035\222\253\214\373\353\377
\172\356\205\112\247\120\200\360\247\134\112\224\056\137\005\231
\074\122\101\340\315\264\143\317\001\103\272\234\203\334\217\140
\073\363\132\264\264\173\256\332\013\220\070\165\357\201\035\146
\322\367\127\160\066\263\277\374\050\257\161\045\205\133\023\376
\036\177\132\264\074

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Entrust Root Certification Authority"

Issuer: CN=Entrust

Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US

Serial Number: 1164660820 (0x456b5054)

Subject: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US

Not Valid Before: Mon Nov 27 20:23:42 2006

Not Valid After : Fri Nov 27 20:53:42 2026

Fingerprint (SHA-256):

73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C

Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

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CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\263\036\261\267\100\343\154\204\002\332\334\067\324\115\365\324
\147\111\122\371
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\326\245\303\355\135\335\076\000\301\075\207\222\037\035\077\344
END
CKA_ISSUER
MULTILINE_OCTAL
\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\167\167\167\056\145\156\164\162\165\163\164\056\156
\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160
\157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145
\156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143
\051\040\062\060\060\066\040\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105
\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\105\153\120\124
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certum Root CA"
#
# Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL
# Serial Number: 65568 (0x10020)
# Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL
# Not Valid Before: Tue Jun 11 10:46:39 2002
# Not Valid After : Fri Jun 11 10:46:39 2027
# Fingerprint (SHA-256):
D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24
# Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```



```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164
\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020
\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164
\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020
\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\000\040
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\014\060\202\001\364\240\003\002\001\002\002\003\001
\000\040\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145
\164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060
\020\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103
\101\060\036\027\015\060\062\060\066\061\061\061\060\064\066\063
\071\132\027\015\062\067\060\066\061\061\061\060\064\066\063\071
\132\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145
\164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060
\020\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103
\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\316\261\301\056\323\117\174\315\045\316\030\076\117\304
\214\157\200\152\163\310\133\121\370\233\322\334\273\000\134\261
\240\374\165\003\356\201\360\210\356\043\122\351\346\025\063\215
\254\055\011\305\166\371\053\071\200\211\344\227\113\220\245\250
\170\370\163\103\173\244\141\260\330\130\314\341\154\146\176\234
\363\011\136\125\143\204\325\250\357\363\261\056\060\150\263\304
\074\330\254\156\215\231\132\220\116\064\334\066\232\217\201\210
\120\267\155\226\102\011\363\327\225\203\015\101\113\260\152\153
\370\374\017\176\142\237\147\304\355\046\137\020\046\017\010\117
\360\244\127\050\316\217\270\355\105\366\156\356\045\135\252\156
\071\276\344\223\057\331\107\240\162\353\372\246\133\257\312\123
\077\342\016\306\226\126\021\156\367\351\146\251\046\330\177\225
\123\355\012\205\210\272\117\051\245\102\214\136\266\374\205\040
```

```
\000\252\150\013\241\032\205\001\234\304\106\143\202\210\266\042
\261\356\376\252\106\131\176\317\065\054\325\266\332\135\367\110
\063\024\124\266\353\331\157\316\315\210\326\253\033\332\226\073
\035\131\002\003\001\000\001\243\023\060\021\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006\011
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000
\270\215\316\357\347\024\272\317\356\260\104\222\154\264\071\076
\242\204\156\255\270\041\167\322\324\167\202\207\346\040\101\201
\356\342\370\021\267\143\321\027\067\276\031\166\044\034\004\032
\114\353\075\252\147\157\055\324\315\376\145\061\160\305\033\246
\002\012\272\140\173\155\130\302\232\111\376\143\062\013\153\343
\072\300\254\253\073\260\350\323\011\121\214\020\203\306\064\340
\305\053\340\032\266\140\024\047\154\062\167\214\274\262\162\230
\317\315\314\077\271\310\044\102\024\326\127\374\346\046\103\251
\035\345\200\220\316\003\124\050\076\367\077\323\370\115\355\152
\012\072\223\023\233\073\024\043\023\143\234\077\321\207\047\171
\345\114\121\343\001\255\205\135\032\073\261\325\163\020\244\323
\362\274\156\144\365\132\126\220\250\307\016\114\164\017\056\161
\073\367\310\107\364\151\157\025\362\021\136\203\036\234\174\122
\256\375\002\332\022\250\131\147\030\333\274\160\335\233\261\151
\355\200\316\211\100\110\152\016\065\312\051\146\025\041\224\054
\350\140\052\233\205\112\100\363\153\212\044\354\006\026\054\163
END
```

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Certum Root CA"

Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

Serial Number: 65568 (0x10020)

Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL

Not Valid Before: Tue Jun 11 10:46:39 2002

Not Valid After : Fri Jun 11

10:46:39 2027

Fingerprint (SHA-256):

D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24

Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certum Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\142\122\334\100\367\021\103\242\057\336\236\367\064\216\006\102
```

```
\121\261\201\030
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```

\054\217\237\146\035\030\220\261\107\046\235\216\206\202\214\251
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164
\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020
\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\000\040
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Comodo AAA Services root"
#
# Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
# Serial Number: 1 (0x1)
# Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
# Not Valid Before: Thu Jan 01 00:00:00 2004
# Not Valid After : Sun Dec 31 23:59:59 2028
# Fingerprint (SHA-256):
D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4
# Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Comodo AAA Services root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061

```

\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\062\060\202\003\032\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033
\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145\162
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006
\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032\060
\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040\103
\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003\125
\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151\143
\141\164\145\040\123\145\162\166\151\143\145\163\060\036\027\015
\060\064\060\061\060\061\060\060\060\060\060\132\027\015\062
\070\061\062\063\061\062\063\065\071\065\071\132\060\173\061\013
\060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006
\003\125\004\010\014\022\107\162\145\141\164\145\162\040\115\141
\156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004
\007\014\007\123\141\154\146\157\162\144\061\032\060\030\006\003
\125\004\012\014\021\103\157\155\157\144\157\040\103\101\040\114
\151\155\151\164\145\144\061\041\060\037\006\003\125\004\003\014
\030\101\101\101\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\276\100\235\364\156\341
\352\166\207\034\115\105\104\216\276\106\310\203\006\235\301\052
\376\030\037\216\344\002\372\363\253\135\120\212\026\061\013\232
\006\320\305\160\042\315\111\055\124\143\314\266\156\150\106\013
\123\352\313\114\044\300\274\162\116\352\361\025\256\364\124\232
\022\012\303\172\262\063\140\342\332\211\125\363\042\130\363\336
\334\317\357\203\206\242\214\224\117\237\150\362\230\220\106\204
\047\307\166\277\343\314\065\054\213\136\007\144\145\202\300\110
\260\250\221\371\141\237\166\040\120\250\221\307\146\265\353\170
\142\003\126\360\212\032\023\352\061\243\036\240\231\375\070\366
\366\047\062\130\157\007\365\153\270\373\024\053\257\267\252\314
\326\143\137\163\214\332\005\231\250\070\250\313\027\170\066\121
\254\351\236\364\170\072\215\317\017\331\102\342\230\014\253\057
\237\016\001\336\357\237\231\111\361\055\337\254\164\115\033\230

\265\107\305\345\051\321\371\220\030\307\142\234\276\203\307\046
\173\076\212\045\307\300\335\235\346\065\150\020\040\235\217\330
\336\322\303\204\234\015\136\350\057\311\002\003\001\000\001\243
\201\300\060\201\275\060\035\006\003\125\035\016\004\026\004\024
\240\021\012\043\076\226\361\007\354\342\257\051\357\202\245\177
\320\060\244\264\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\173\006\003\125\035\037\004\164\060\162
\060\070\240\066\240\064\206\062\150\164\164\160\072\057\057\143
\162\154\056\143\157\155\157\144\157\143\141\056\143\157\155\057
\101\101\101\103\145\162\164\151\146\151\143\141\164\145\123\145
\162\166\151\143\145\163\056\143\162\154\060\066\240\064\240\062
\206\060\150\164\164\160\072\057\057\143\162\154\056\143\157\155
\157\144\157\056\156\145\164\057\101\101\101\103\145\162\164\151
\146\151\143\141\164\145\123\145\162\166\151\143\145\163\056\143
\162\154\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\003\202\001\001\000\010\126\374\002\360\233\350\377\244\372
\326\173\306\104\200\316\117\304\305\366\000\130\314\246\266\274
\024\111\150\004\166\350\346\356\135\354\002\017\140\326\215\120
\030\117\046\116\001\343\346\260\245\356\277\274\164\124\101\277
\375\374\022\270\307\117\132\364\211\140\005\177\140\267\005\112
\363\366\361\302\277\304\271\164\206\266\055\175\153\314\322\363
\106\335\057\306\340\152\303\303\064\003\054\175\226\335\132\302
\016\247\012\231\301\005\213\253\014\057\363\134\072\317\154\067
\125\011\207\336\123\100\154\130\357\374\266\253\145\156\004\366
\033\334\074\340\132\025\306\236\331\361\131\110\060\041\145\003
\154\354\351\041\163\354\233\003\241\340\067\255\240\025\030\217
\372\272\002\316\247\054\251\020\023\054\324\345\010\046\253\042
\227\140\370\220\136\164\324\242\232\123\275\362\251\150\340\242
\156\302\327\154\261\243\017\236\277\353\150\347\126\362\256\362
\343\053\070\072\011\201\265\153\205\327\276\055\355\077\032\267
\262\143\342\365\142\054\202\324\152\000\101\120\361\071\203\237
\225\351\066\226\230\156

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "Comodo AAA Services root"

Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB

Serial Number: 1 (0x1)

Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB

Not Valid Before: Thu Jan 01 00:00:00 2004

Not Valid After : Sun Dec 31 23:59:59 2028

Fingerprint

(SHA-256):

D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4

```

# Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Comodo AAA Services root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\321\353\043\244\155\027\326\217\331\045\144\302\361\361\140\027
\144\330\343\111
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\111\171\004\260\353\207\031\254\107\260\274\021\121\233\164\320
END
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061
\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145
\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016
\006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032
\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040
\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003
\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "QuoVadis Root CA 2"
#
# Issuer: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM
# Serial Number: 1289 (0x509)
# Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM
# Not Valid Before: Fri Nov 24 18:27:00 2006
# Not Valid After : Mon Nov 24 18:23:33 2031
# Fingerprint (SHA-256):
85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86
# Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL

```

```
CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\005\011
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\267\060\202\003\237\240\003\002\001\002\002\002\005
\011\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062\060\036\027\015\060\066\061\061\062
\064\061\070\062\067\060\060\132\027\015\063\061\061\061\062\064
\061\070\062\063\063\063\132\060\105\061\013\060\011\006\003\125
\004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023
\020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145
\144\061\033\060\031\006\003\125\004\003\023\022\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\101\040\062\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\232
\030\312\113\224\015\000\055\257\003\051\212\360\017\201\310\256
\114\031\205\035\010\237\253\051\104\205\363\057\201\255\062\036
\220\106\277\243\206\046\032\036\376\176\034\030\072\134\234\140
\027\052\072\164\203\063\060\175\141\124\021\313\355\253\340\346
\322\242\176\365\153\157\030\267\012\013\055\375\351\076\357\012
\306\263\020\351\334\302\106\027\370\135\375\244\332\377\236\111
\132\234\346\063\346\044\226\367\077\272\133\053\034\172\065\302
\326\147\376\253\146\120\213\155\050\140\053\357\327\140\303\307
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\220\103\267\154\023\361\336\335\366\304\370\211\077\321\165\365
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\226\213\015\003\375\234\277\133\026\254\222\333\352\376\171\174
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\121\314\072\123\014\110\346\016\275\311\264\166\006\122\346\021
\023\205\162\143\003\004\340\004\066\053\040\031\002\350\164\247
\037\266\311\126\146\360\165\045\334\147\301\016\141\140\210\263
\076\321\250\374\243\332\035\260\321\261\043\124\337\104\166\155
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\226\236\043\175\202\244\114\201\342\241\321\272\147\137\225\007
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\311\136\373\314\141\334\213\063\167\323\104\062\065\011\142\004
\222\026\020\330\236\047\107\373\073\041\343\370\353\035\133\002
\003\001\000\001\243\201\260\060\201\255\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003\125
\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016\004
\026\004\024\032\204\142\274\110\114\063\045\004\324\356\320\366
\003\304\031\106\321\224\153\060\156\006\003\125\035\043\004\147
\060\145\200\024\032\204\142\274\110\114\063\045\004\324\356\320
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\003\030\047\125\211\170\175\166\352\226\064\200\027\040\334\347
\203\370\215\374\007\270\332\137\115\056\147\262\204\375\331\104
\374\167\120\201\346\174\264\311\015\013\162\123\370\166\007\007
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\174\137\347\046\263\367\062\220\230\120\324\067\161\125\366\222
\041\170\367\225\171\372\370\055\046\207\146\126\060\167\246\067
\170\063\122\020\130\256\077\141\216\362\152\261\357\030\176\112
\131\143\312\215\242\126\325\247\057\274\126\037\317\071\301\342
\373\012\250\025\054\175\115\172\143\306\154\227\104\074\322\157
\303\112\027\012\370\220\322\127\242\031\121\245\055\227\101\332
\007\117\251\120\332\220\215\224\106\341\076\360\224\375\020\000
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\125\172\155\200\231\044\365\154\001\373\370\227\260\224\133\353
\375\322\157\361\167\150\015\065\144\043\254\270\125\241\003\321
\115\102\031\334\370\165\131\126\243\371\250\111\171\370\257\016
\271\021\240\174\267\152\355\064\320\266\046\142\070\032\207\014
\370\350\375\056\323\220\177\007\221\052\035\326\176\134\205\203
\231\260\070\010\077\351\136\371\065\007\344\311\142\156\127\177
\247\120\225\367\272\310\233\346\216\242\001\305\326\146\277\171
\141\363\074\034\341\271\202\134\135\240\303\351\330\110\275\031
\242\021\024\031\156\262\206\033\150\076\110\067\032\210\267\135
\226\136\234\307\357\047\142\010\342\221\031\134\322\361\041\335
\272\027\102\202\227\161\201\123\061\251\237\366\175\142\277\162
\341\243\223\035\314\212\046\132\011\070\320\316\327\015\200\026
\264\170\245\072\207\114\215\212\245\325\106\227\362\054\020\271
\274\124\042\300\001\120\151\103\236\364\262\357\155\370\354\332
\361\343\261\357\337\221\217\124\052\013\045\301\046\031\304\122
\020\005\145\325\202\020\352\302\061\315\056
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "QuoVadis Root CA 2"

Issuer: CN=QuoVadis Root

CA 2,O=QuoVadis Limited,C=BM

Serial Number: 1289 (0x509)

Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

Not Valid Before: Fri Nov 24 18:27:00 2006

Not Valid After : Mon Nov 24 18:23:33 2031

Fingerprint (SHA-256):

85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86

Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "QuoVadis Root CA 2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\312\072\373\317\022\100\066\113\104\262\026\040\210\200\110\071
\031\223\174\367
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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\136\071\173\335\370\272\354\202\351\254\142\272\014\124\000\053
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
```

```
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\002\005\011
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "QuoVadis Root CA 3"

#

Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

Serial Number: 1478 (0x5c6)

Subject: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

Not Valid Before: Fri Nov 24 19:11:23 2006

Not Valid After : Mon Nov 24 19:06:44 2031

Fingerprint (SHA-256):

18:F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35

Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL

UTF8 "QuoVadis Root CA 3"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063
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END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063
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END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\002\005\306

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\235\060\202\004\205\240\003\002\001\002\002\002\005
\306\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\060\036\027\015\060\066\061\061\062
\064\061\071\061\061\062\063\132\027\015\063\061\061\061\062\064
\061\071\060\066\064\064\132\060\105\061\013\060\011\006\003\125
\004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023
\020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145
\144\061\033\060\031\006\003\125\004\003\023\022\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\101\040\063\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\314
\127\102\026\124\234\346\230\323\323\115\356\376\355\307\237\103
\071\112\145\263\350\026\210\064\333\015\131\221\164\317\222\270
\004\100\255\002\113\061\253\274\215\221\150\330\040\016\032\001
\342\032\173\116\027\135\342\212\267\077\231\032\315\353\141\253
\302\145\246\037\267\267\275\267\217\374\375\160\217\013\240\147
\276\001\242\131\317\161\346\017\051\166\377\261\126\171\105\053
\037\236\172\124\350\243\051\065\150\244\001\117\017\244\056\067
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\201\257\261\075\052\304\145\072\170\266\356\334\200\261\322\323
\231\234\072\356\153\132\153\263\215\267\325\316\234\302\276\245
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\051\247\230\243\045\103\057\357\361\137\046\341\210\115\370\136
\156\327\331\024\156\031\063\151\247\073\204\211\223\304\123\125
\023\241\121\170\100\370\270\311\242\356\173\272\122\102\203\236
\024\355\005\122\132\131\126\247\227\374\235\077\012\051\330\334
\117\221\016\023\274\336\225\244\337\213\231\276\254\233\063\210
\357\265\201\257\033\306\042\123\310\366\307\356\227\024\260\305
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\210\014\125\041\130\305\341\072\237\052\335\312\341\220\340\331
\163\253\154\200\270\350\013\144\223\240\234\214\031\377\263\322
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\373\356\057\147\062\226\065\134\333\270\313\002\320\060\156\006
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\076\373\356\057\147\062\226\065\134\333\270\313\002\320\241\111
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\356\347\051\332\303\133\266\260\203\331\320\320\342\041\373\363
\140\247\073\135\140\123\047\242\233\366\010\042\052\347\277\240
\162\345\234\044\152\061\261\220\172\047\333\204\021\211\047\246
\167\132\070\327\277\254\206\374\356\135\203\274\006\306\321\167
\153\017\155\044\057\113\172\154\247\007\226\312\343\204\237\255
\210\213\035\253\026\215\133\146\027\331\026\364\213\200\322\335
\370\262\166\303\374\070\023\252\014\336\102\151\053\156\363\074
\353\200\047\333\365\246\104\015\237\132\125\131\013\325\015\122
\110\305\256\237\362\057\200\305\352\062\120\065\022\227\056\301
\341\377\361\043\210\121\070\237\362\146\126\166\347\017\121\227
\245\122\014\115\111\121\225\066\075\277\242\113\014\020\035\206
\231\114\252\363\162\021\223\344\352\366\233\332\250\135\247\115
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\000\224\313\042\040\276\224\247\131\265\202\152\276\231\171\172
\251\362\112\044\122\367\164\375\272\116\346\250\035\002\156\261
\015\200\104\301\256\323\043\067\137\273\205\174\053\222\056\350
\176\245\213\335\231\341\277\047\157\055\135\252\173\207\376\012
\335\113\374\216\365\046\344\156\160\102\156\063\354\061\236\173

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\002\323\240\330\125\212\006\231\031\242\240\167\321\060\236\254
\314\165\356\203\365\260\142\071\317\154\127\342\114\322\221\013
\016\165\050\033\232\277\375\032\103\361\312\167\373\073\217\141
\270\151\050\026\102\004\136\160\052\034\041\330\217\341\275\043
\133\055\164\100\222\331\143\031\015\163\335\151\274\142\107\274
\340\164\053\262\353\175\276\101\033\265\300\106\305\241\042\313
\137\116\301\050\222\336\030\272\325\052\050\273\021\213\027\223
\230\231\140\224\134\043\317\132\047\227\136\013\005\006\223\067
\036\073\151\066\353\251\236\141\035\217\062\332\216\014\326\164
\076\173\011\044\332\001\167\107\304\073\315\064\214\231\365\312
\341\045\141\063\262\131\033\342\156\327\067\127\266\015\251\022
\332
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "QuoVadis Root CA 3"

Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

Serial Number: 1478 (0x5c6)

Subject:

CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

Not Valid Before: Fri Nov 24 19:11:23 2006

Not Valid After : Mon Nov 24 19:06:44 2031

Fingerprint (SHA-256):

18:F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35

Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "QuoVadis Root CA 3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\037\111\024\367\330\164\225\035\335\256\002\300\276\375\072\055
\202\165\121\205
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\061\205\074\142\224\227\143\271\252\375\211\116\257\157\340\317
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063
```

```

END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\005\306
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Security Communication Root CA"
#
# Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Not Valid Before: Tue Sep 30 04:20:49 2003
# Not Valid After : Sat Sep 30 04:20:49 2023
# Fingerprint (SHA-256):
E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C
# Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication
Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END

```

CKA_VALUE MULTILINE_OCTAL

\060\202\003\132\060\202\002\102\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061\030
\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040\124
\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125\004
\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155\155
\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103\101
\061\060\036\027\015\060\063\060\071\063\060\060\064\062\060\064
\071\132\027\015\062\063\060\071\063\060\060\064\062\060\064\071
\132\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120
\061\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115
\040\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003
\125\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157
\155\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164
\103\101\061\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\263\263\376\177\323\155\261\357\026\174\127\245
\014\155\166\212\057\113\277\144\373\114\356\212\360\363\051\174
\365\377\356\052\340\351\351\272\133\144\042\232\232\157\054\072
\046\151\121\005\231\046\334\325\034\152\161\306\232\175\036\235
\335\174\154\306\214\147\147\112\076\370\161\260\031\047\251\011
\014\246\225\277\113\214\014\372\125\230\073\330\350\042\241\113
\161\070\171\254\227\222\151\263\211\176\352\041\150\006\230\024
\226\207\322\141\066\274\155\047\126\236\127\356\300\300\126\375
\062\317\244\331\216\302\043\327\215\250\363\330\045\254\227\344
\160\070\364\266\072\264\235\073\227\046\103\243\241\274\111\131
\162\114\043\060\207\001\130\366\116\276\034\150\126\146\257\315
\101\135\310\263\115\052\125\106\253\037\332\036\342\100\075\333
\315\175\271\222\200\234\067\335\014\226\144\235\334\042\367\144
\213\337\141\336\025\224\122\025\240\175\122\311\113\250\041\311
\306\261\355\313\303\225\140\321\017\360\253\160\370\337\313\115
\176\354\326\372\253\331\275\177\124\362\245\351\171\372\331\326
\166\044\050\163\002\003\001\000\001\243\077\060\075\060\035\006
\003\125\035\016\004\026\004\024\240\163\111\231\150\334\205\133
\145\343\233\050\057\127\237\275\063\274\007\110\060\013\006\003
\125\035\017\004\004\003\002\001\006\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\150\100
\251\250\273\344\117\135\171\263\005\265\027\263\140\023\353\306
\222\135\340\321\323\152\376\373\276\233\155\277\307\005\155\131
\040\304\034\360\267\332\204\130\002\143\372\110\026\357\117\245
\013\367\112\230\362\077\236\033\255\107\153\143\316\010\107\353
\122\077\170\234\257\115\256\370\325\117\317\232\230\052\020\101
\071\122\304\335\331\233\016\357\223\001\256\262\056\312\150\102
\044\102\154\260\263\072\076\315\351\332\110\304\025\313\351\371
\007\017\222\120\111\212\335\061\227\137\311\351\067\252\073\131
\145\227\224\062\311\263\237\076\072\142\130\305\111\255\142\016

```
\161\245\062\252\057\306\211\166\103\100\023\023\147\075\242\124
\045\020\313\361\072\362\331\372\333\111\126\273\246\376\247\101
\065\303\340\210\141\311\210\307\337\066\020\042\230\131\352\260
\112\373\126\026\163\156\254\115\367\042\241\117\255\035\172\055
\105\047\345\060\301\136\362\332\023\313\045\102\121\225\107\003
\214\154\041\314\164\102\355\123\377\063\213\217\017\127\001\026
\057\317\246\356\311\160\042\024\275\375\276\154\013\003
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Security Communication Root CA"

Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP

Serial Number: 0 (0x0)

Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP

Not Valid Before: Tue Sep 30 04:20:49 2003

Not Valid After : Sat Sep 30 04:20:49 2023

Fingerprint (SHA-256):

E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C

Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Security Communication Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\066\261\053\111\371\201\236\327\114\236\274\070\017\306\126\217
\135\254\262\367
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\361\274\143\152\124\340\265\047\365\315\347\032\343\115\156\112
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\001\000
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#

Certificate "Camerfirma Chambers of Commerce Root"

#

Issuer: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

Serial Number: 0 (0x0)

Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

Not Valid Before: Tue Sep 30 16:13:43 2003

Not Valid After : Wed Sep 30 16:13:44 2037

Fingerprint (SHA-256):

0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3

Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1

For Email Distrust After: Mon Mar 01 00:00:00 2021

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\275\060\202\003\245\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047
\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145
\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070
\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013
\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141
\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060\040
\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163\040
\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157\164
\060\036\027\015\060\063\060\071\063\060\061\066\061\063\064\063
\132\027\015\063\067\060\071\063\060\061\066\061\063\064\064\132
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164\060\202\001\040\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\015\000\060\202\001\010\002\202\001
\001\000\267\066\125\345\245\135\030\060\340\332\211\124\221\374
\310\307\122\370\057\120\331\357\261\165\163\145\107\175\033\133
\272\165\305\374\241\210\044\372\057\355\312\010\112\071\124\304
\121\172\265\332\140\352\070\074\201\262\313\361\273\331\221\043
\077\110\001\160\165\251\005\052\255\037\161\363\311\124\075\035
\006\152\100\076\263\014\205\356\134\033\171\302\142\304\270\066
\216\065\135\001\014\043\004\107\065\252\233\140\116\240\146\075
\313\046\012\234\100\241\364\135\230\277\161\253\245\000\150\052
\355\203\172\017\242\024\265\324\042\263\200\260\074\014\132\121
\151\055\130\030\217\355\231\236\361\256\342\225\346\366\107\250
\326\014\017\260\130\130\333\303\146\067\236\233\221\124\063\067
\322\224\034\152\110\311\311\362\245\332\245\014\043\367\043\016
\234\062\125\136\161\234\204\005\121\232\055\375\346\116\052\064
\132\336\312\100\067\147\014\124\041\125\167\332\012\014\314\227
\256\200\334\224\066\112\364\076\316\066\023\036\123\344\254\116
\072\005\354\333\256\162\234\070\213\320\071\073\211\012\076\167
\376\165\002\001\003\243\202\001\104\060\202\001\100\060\022\006
\003\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001
\014\060\074\006\003\125\035\037\004\065\060\063\060\061\240\057
\240\055\206\053\150\164\164\160\072\057\057\143\162\154\056\143
\150\141\155\142\145\162\163\151\147\156\056\157\162\147\057\143

\150\141\155\142\145\162\163\162\157\157\164\056\143\162\154\060
\035\006\003\125\035\016\004\026\004\024\343\224\365\261\115\351
\333\241\051\133\127\213\115\166\006\166\341\321\242\212\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\021
\006\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000
\007\060\047\006\003\125\035\021\004\040\060\036\201\034\143\150
\141\155\142\145\162\163\162\157\157\164\100\143\150\141\155\142
\145\162\163\151\147\156\056\157\162\147\060\047\006\003\125\035
\022\004\040\060\036\201\034\143\150\141\155\142\145\162\163\162
\157\157\164\100\143\150\141\155\142\145\162\163\151\147\156\056
\157\162\147\060\130\006\003\125\035\040\004\121\060\117\060\115
\006\013\053\006\001\004\001\201\207\056\012\003\001\060\076\060
\074\006\010\053\006\001\005\005\007\002\001\026\060\150\164\164
\160\072\057\057\143\160\163\056\143\150\141\155\142\145\162\163
\151\147\156\056\157\162\147\057\143\160\163\057\143\150\141\155
\142\145\162\163\162\157\157\164\056\150\164\155\154\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\014\101\227\302\032\206\300\042\174\237\373\220\363\032\321
\003\261\357\023\371\041\137\004\234\332\311\245\215\047\154\226
\207\221\276\101\220\001\162\223\347\036\175\137\366\211\306\135
\247\100\011\075\254\111\105\105\334\056\215\060\150\262\011\272
\373\303\057\314\272\013\337\077\167\173\106\175\072\022\044\216
\226\217\074\005\012\157\322\224\050\035\155\014\300\056\210\042
\325\330\317\035\023\307\360\110\327\327\005\247\317\307\107\236
\073\074\064\310\200\117\324\024\273\374\015\120\367\372\263\354
\102\137\251\335\155\310\364\165\317\173\301\162\046\261\001\034
\134\054\375\172\116\264\001\305\005\127\271\347\074\252\005\331
\210\351\007\106\101\316\357\101\201\256\130\337\203\242\256\312
\327\167\037\347\000\074\235\157\216\344\062\011\035\115\170\064
\170\064\074\224\233\046\355\117\161\306\031\172\275\040\042\110
\132\376\113\175\003\267\347\130\276\306\062\116\164\036\150\335
\250\150\133\263\076\356\142\175\331\200\350\012\165\172\267\356
\264\145\232\041\220\340\252\320\230\274\070\265\163\074\213\370
\334

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER MULTILINE_OCTAL

\062\061\060\063\060\061\060\060\060\060\060\060\132

END

Trust for "Camerfirma Chambers of Commerce Root"

Issuer: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

Serial Number: 0 (0x0)

Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

```
# Not Valid Before: Tue Sep 30 16:13:43 2003
# Not Valid After : Wed Sep 30 16:13:44 2037
# Fingerprint (SHA-256):
0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3
# Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\156\072\125\244\031\014\031\134\223\204\074\300\333\162\056\061
\060\141\360\261
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\260\001\356\024\331\257\051\030\224\166\216\361\151\063\052\204
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "XRamp Global CA Root"
#
# Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad
# Subject: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Not Valid Before: Mon Nov 01 17:14:04 2004
# Not Valid After : Mon Jan 01 05:37:19 2035
```

```
# Fingerprint (SHA-256):
CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2
# Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "XRamp Global CA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217
\240\255
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\060\060\202\003\030\240\003\002\001\002\002\020\120
\224\154\354\030\352\325\234\115\325\227\357\165\217\240\255\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\202\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036
\060\034\006\003\125\004\013\023\025\167\167\167\056\170\162\141
\155\160\163\145\143\165\162\151\164\171\056\143\157\155\061\044
\060\042\006\003\125\004\012\023\033\130\122\141\155\160\040\123
\145\143\165\162\151\164\171\040\123\145\162\166\151\143\145\163
\040\111\156\143\061\055\060\053\006\003\125\004\003\023\044\130
```

\122\141\155\160\040\107\154\157\142\141\154\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\060\036\027\015\060\064\061\061\060\061\061\067\061
\064\060\064\132\027\015\063\065\060\061\060\061\060\065\063\067
\061\071\132\060\201\202\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\036\060\034\006\003\125\004\013\023\025\167\167
\167\056\170\162\141\155\160\163\145\143\165\162\151\164\171\056
\143\157\155\061\044\060\042\006\003\125\004\012\023\033\130\122
\141\155\160\040\123\145\143\165\162\151\164\171\040\123\145\162
\166\151\143\145\163\040\111\156\143\061\055\060\053\006\003\125
\004\003\023\044\130\122\141\155\160\040\107\154\157\142\141\154
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\230\044\036\275\025\264\272
\337\307\214\245\047\266\070\013\151\363\266\116\250\054\056\041
\035\134\104\337\041\135\176\043\164\376\136\176\264\112\267\246
\255\037\256\340\006\026\342\233\133\331\147\164\153\135\200\217
\051\235\206\033\331\234\015\230\155\166\020\050\130\344\145\260
\177\112\230\171\237\340\303\061\176\200\053\265\214\300\100\073
\021\206\320\313\242\206\066\140\244\325\060\202\155\331\156\320
\017\022\004\063\227\137\117\141\132\360\344\371\221\253\347\035
\073\274\350\317\364\153\055\064\174\342\110\141\034\216\363\141
\104\314\157\240\112\251\224\260\115\332\347\251\064\172\162\070
\250\101\314\074\224\021\175\353\310\246\214\267\206\313\312\063
\073\331\075\067\213\373\172\076\206\054\347\163\327\012\127\254
\144\233\031\353\364\017\004\010\212\254\003\027\031\144\364\132
\045\042\215\064\054\262\366\150\035\022\155\323\212\036\024\332
\304\217\246\342\043\205\325\172\015\275\152\340\351\354\354\027
\273\102\033\147\252\045\355\105\203\041\374\301\311\174\325\142
\076\372\362\305\055\323\375\324\145\002\003\001\000\001\243\201
\237\060\201\234\060\023\006\011\053\006\001\004\001\202\067\024
\002\004\006\036\004\000\103\000\101\060\013\006\003\125\035\017
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\306\117\242\075\006\143\204\011\234\316\142\344\004\254
\215\134\265\351\266\033\060\066\006\003\125\035\037\004\057\060
\055\060\053\240\051\240\047\206\045\150\164\164\160\072\057\057
\143\162\154\056\170\162\141\155\160\163\145\143\165\162\151\164
\171\056\143\157\155\057\130\107\103\101\056\143\162\154\060\020
\006\011\053\006\001\004\001\202\067\025\001\004\003\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\221\025\071\003\001\033\147\373\112\034\371\012
\140\133\241\332\115\227\142\371\044\123\047\327\202\144\116\220
\056\303\111\033\053\232\334\374\250\170\147\065\361\035\360\021
\275\267\110\343\020\366\015\337\077\322\311\266\252\125\244\110
\272\002\333\336\131\056\025\133\073\235\026\175\107\327\067\352
\137\115\166\022\066\273\037\327\241\201\004\106\040\243\054\155

```
\251\236\001\176\077\051\316\000\223\337\375\311\222\163\211\211
\144\236\347\053\344\034\221\054\322\271\316\175\316\157\061\231
\323\346\276\322\036\220\360\011\024\171\134\043\253\115\322\332
\041\037\115\231\171\235\341\317\047\237\020\233\034\210\015\260
\212\144\101\061\270\016\154\220\044\244\233\134\161\217\272\273
\176\034\033\333\152\200\017\041\274\351\333\246\267\100\364\262
\213\251\261\344\357\232\032\320\075\151\231\356\250\050\243\341
\074\263\360\262\021\234\317\174\100\346\335\347\103\175\242\330
\072\265\251\215\362\064\231\304\324\020\341\006\375\011\204\020
\073\356\304\114\364\354\047\174\102\302\164\174\202\212\011\311
\264\003\045\274
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "XRamp Global CA Root"

Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US

Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad

Subject: CN=XRamp

Global Certification Authority,O=XRamp Security Services Inc,OU=www.xrampsecurity.com,C=US

Not Valid Before: Mon Nov 01 17:14:04 2004

Not Valid After : Mon Jan 01 05:37:19 2035

Fingerprint (SHA-256):

CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2

Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "XRamp Global CA Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\270\001\206\321\353\234\206\245\101\004\317\060\124\363\114\122
\267\345\130\306
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\241\013\104\263\312\020\330\000\156\235\017\330\017\222\012\321
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
```

\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150

\157\162\151\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217

\240\255

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Go Daddy Class 2 CA"

#

Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

Serial Number: 0 (0x0)

Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

Not Valid Before: Tue Jun 29 17:06:20 2004

Not Valid After : Thu Jun

29 17:06:20 2034

Fingerprint (SHA-256):

C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4

Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Go Daddy Class 2 CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157

\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156

\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040

\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145

\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150

\157\162\151\164\171

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157

\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156

\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040

\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145

\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150

\157\162\151\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\000\060\202\002\350\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041
\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157\040
\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156\143
\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040\104
\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\060\036\027\015\060\064\060\066\062\071\061\067
\060\066\062\060\132\027\015\063\064\060\066\062\071\061\067\060
\066\062\060\132\060\143\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\041\060\037\006\003\125\004\012\023\030\124\150
\145\040\107\157\040\104\141\144\144\171\040\107\162\157\165\160
\054\040\111\156\143\056\061\061\060\057\006\003\125\004\013\023
\050\107\157\040\104\141\144\144\171\040\103\154\141\163\163\040
\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\060\202\001\040\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\015
\000\060\202\001\010\002\202\001\001\000\336\235\327\352\127\030
\111\241\133\353\327\137\110\206\352\276\335\377\344\357\147\034
\364\145\150\263\127\161\240\136\167\273\355\233\111\351\160\200
\075\126\030\143\010\157\332\362\314\320\077\177\002\124\042\124
\020\330\262\201\324\300\165\075\113\177\307\167\303\076\170\253
\032\003\265\040\153\057\152\053\261\305\210\176\304\273\036\260
\301\330\105\047\157\252\067\130\367\207\046\327\330\055\366\251
\027\267\037\162\066\116\246\027\077\145\230\222\333\052\156\135
\242\376\210\340\013\336\177\345\215\025\341\353\313\072\325\342
\022\242\023\055\330\216\257\137\022\075\240\010\005\010\266\134
\245\145\070\004\105\231\036\243\140\140\164\305\101\245\162\142
\033\142\305\037\157\137\032\102\276\002\121\145\250\256\043\030
\152\374\170\003\251\115\177\200\303\372\253\132\374\241\100\244
\312\031\026\376\262\310\357\136\163\015\356\167\275\232\366\171
\230\274\261\007\147\242\025\015\335\240\130\306\104\173\012\076
\142\050\137\272\101\007\123\130\317\021\176\070\164\305\370\377
\265\151\220\217\204\164\352\227\033\257\002\001\003\243\201\300
\060\201\275\060\035\006\003\125\035\016\004\026\004\024\322\304
\260\322\221\324\114\021\161\263\141\313\075\241\376\335\250\152
\324\343\060\201\215\006\003\125\035\043\004\201\205\060\201\202
\200\024\322\304\260\322\221\324\114\021\161\263\141\313\075\241
\376\335\250\152\324\343\241\147\244\145\060\143\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\041\060\037\006\003\125

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\004\012\023\030\124\150\145\040\107\157\040\104\141\144\144\171
\040\107\162\157\165\160\054\040\111\156\143\056\061\061\060\057
\006\003\125\004\013\023\050\107\157\040\104\141\144\144\171\040
\103\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\202
\001\000\060\014\006\003\125\035\023\004\005\060\003\001\001\377
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\062\113\363\262\312\076\221\374\022\306\241\007
\214\216\167\240\063\006\024\134\220\036\030\367\010\246\075\012
\031\371\207\200\021\156\151\344\226\027\060\377\064\221\143\162
\070\356\314\034\001\243\035\224\050\244\061\366\172\304\124\327
\366\345\061\130\003\242\314\316\142\333\224\105\163\265\277\105
\311\044\265\325\202\002\255\043\171\151\215\270\266\115\316\317
\114\312\063\043\350\034\210\252\235\213\101\156\026\311\040\345
\211\236\315\073\332\160\367\176\231\046\040\024\124\045\253\156
\163\205\346\233\041\235\012\154\202\016\250\370\302\014\372\020
\036\154\226\357\207\015\304\017\141\213\255\356\203\053\225\370
\216\222\204\162\071\353\040\352\203\355\203\315\227\156\010\274
\353\116\046\266\163\053\344\323\366\114\376\046\161\342\141\021
\164\112\377\127\032\207\017\165\110\056\317\121\151\027\240\002
\022\141\225\325\321\100\262\020\114\356\304\254\020\103\246\245
\236\012\325\225\142\232\015\317\210\202\305\062\014\344\053\237
\105\346\015\237\050\234\261\271\052\132\127\255\067\017\257\035
\177\333\275\237
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Go Daddy Class 2 CA"

Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

Serial Number: 0 (0x0)

Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US

Not Valid Before: Tue

Jun 29 17:06:20 2004

Not Valid After : Thu Jun 29 17:06:20 2034

Fingerprint (SHA-256):

C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4

Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Go Daddy Class 2 CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\047\226\272\346\077\030\001\342\167\046\033\240\327\167\160\002
```

```
\217\040\356\344
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\221\336\006\045\253\332\375\062\027\014\273\045\027\052\204\147
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157
\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156
\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040
\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Starfield Class 2 CA"
#
# Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US
# Serial Number: 0 (0x0)
# Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US
# Not Valid Before: Tue Jun 29 17:39:16 2004
# Not Valid After : Thu Jun 29 17:39:16 2034
# Fingerprint (SHA-256):
14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58
# Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Class 2 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151
\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163
\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023
\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163
\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171

```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151
\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163
\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023
\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163
\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\017\060\202\002\367\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061\045
\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151\145
\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163\054
\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023\051
\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163\040
\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\060\036\027\015\060\064\060
\066\062\071\061\067\063\071\061\066\132\027\015\063\064\060\066
\062\071\061\067\063\071\061\066\132\060\150\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\045\060\043\006\003\125\004
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061
\062\060\060\006\003\125\004\013\023\051\123\164\141\162\146\151
\145\154\144\040\103\154\141\163\163\040\062\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\060\202\001\040\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\015\000\060\202\001\010\002
\202\001\001\000\267\062\310\376\351\161\246\004\205\255\014\021
\144\337\316\115\357\310\003\030\207\077\241\253\373\074\246\237
\360\303\241\332\324\330\156\053\123\220\373\044\244\076\204\360
\236\350\137\354\345\047\104\365\050\246\077\173\336\340\052\360
\310\257\123\057\236\312\005\001\223\036\217\146\034\071\247\115
\372\132\266\163\004\045\146\353\167\177\347\131\306\112\231\045
\024\124\353\046\307\363\177\031\325\060\160\217\257\260\106\052
\377\255\353\051\355\327\237\252\004\207\243\324\371\211\245\064
\137\333\103\221\202\066\331\146\074\261\270\271\202\375\234\072
\076\020\310\073\357\006\145\146\172\233\031\030\075\377\161\121
\074\060\056\137\276\075\167\163\262\135\006\154\303\043\126\232
\053\205\046\222\034\247\002\263\344\077\015\257\010\171\202\270
\066\075\352\234\323\065\263\274\151\312\365\314\235\350\375\144

\215\027\200\063\156\136\112\135\231\311\036\207\264\235\032\300
\325\156\023\065\043\136\337\233\137\075\357\326\367\166\302\352
\076\273\170\015\034\102\147\153\004\330\370\326\332\157\213\362
\104\240\001\253\002\001\003\243\201\305\060\201\302\060\035\006
\003\125\035\016\004\026\004\024\277\137\267\321\316\335\037\206
\364\133\125\254\334\327\020\302\016\251\210\347\060\201\222\006
\003\125\035\043\004\201\212\060\201\207\200\024\277\137\267\321
\316\335\037\206\364\133\125\254\334\327\020\302\016\251\210\347
\241\154\244\152\060\150\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\045\060\043\006\003\125\004\012\023\034\123\164
\141\162\146\151\145\154\144\040\124\145\143\150\156\157\154\157
\147\151\145\163\054\040\111\156\143\056\061\062\060\060\006\003
\125\004\013\023\051\123\164\141\162\146\151\145\154\144\040\103
\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\202\001
\000\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\001\001\000\005\235\077\210\235\321\311\032\125\241\254\151\363
\363\131\332\233\001\207\032\117\127\251\241\171\011\052\333\367
\057\262\036\314\307\136\152\330\203\207\241\227\357\111\065\076
\167\006\101\130\142\277\216\130\270\012\147\077\354\263\335\041
\146\037\311\124\372\162\314\075\114\100\330\201\257\167\236\203
\172\273\242\307\365\064\027\216\331\021\100\364\374\054\052\115
\025\177\247\142\135\056\045\323\000\013\040\032\035\150\371\027
\270\364\275\213\355\050\131\335\115\026\213\027\203\310\262\145
\307\055\172\245\252\274\123\206\155\335\127\244\312\370\040\101
\013\150\360\364\373\164\276\126\135\172\171\365\371\035\205\343
\055\225\276\365\161\220\103\314\215\037\232\000\012\207\051\351
\125\042\130\000\043\352\343\022\103\051\133\107\010\335\214\101
\152\145\006\250\345\041\252\101\264\225\041\225\271\175\321\064
\253\023\326\255\274\334\342\075\071\315\275\076\165\160\241\030
\131\003\311\042\264\217\234\325\136\052\327\245\266\324\012\155
\370\267\100\021\106\232\037\171\016\142\277\017\227\354\340\057
\037\027\224

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Starfield Class 2 CA"

Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

Serial Number: 0 (0x0)

Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

Not Valid Before: Tue Jun 29 17:39:16 2004

Not Valid After : Thu Jun 29 17:39:16 2034

Fingerprint (SHA-256):

14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58

```

#
Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Class 2 CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\255\176\034\050\260\144\357\217\140\003\100\040\024\303\320\343
\067\016\265\212
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\062\112\113\273\310\143\151\233\276\164\232\306\335\035\106\044
END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151
\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163
\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023
\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163
\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

#
# Certificate "DigiCert Assured ID Root CA"
#
# Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39
# Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C
# Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root CA"

```

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT

MULTILINE_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\103\101

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\014\347\340\345\027\330\106\376\217\345\140\374\033\360
\060\071

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\003\267\060\202\002\237\240\003\002\001\002\002\020\014
\347\340\345\027\330\106\376\217\345\140\374\033\360\060\071\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145
\162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157
\157\164\040\103\101\060\036\027\015\060\066\061\061\061\060\060
\060\060\060\060\060\132\027\015\063\061\061\061\061\060\060\060
\060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104
\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006
\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145
\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023
\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145
\144\040\111\104\040\122\157\157\164\040\103\101\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\255\016\025
\316\344\103\200\134\261\207\363\267\140\371\161\022\245\256\334

\046\224\210\252\364\316\365\040\071\050\130\140\014\370\200\332
\251\025\225\062\141\074\265\261\050\204\212\212\334\237\012\014
\203\027\172\217\220\254\212\347\171\123\134\061\204\052\366\017
\230\062\066\166\314\336\335\074\250\242\357\152\373\041\362\122
\141\337\237\040\327\037\342\261\331\376\030\144\322\022\133\137
\371\130\030\065\274\107\315\241\066\371\153\177\324\260\070\076
\301\033\303\214\063\331\330\057\030\376\050\017\263\247\203\326
\303\156\104\300\141\065\226\026\376\131\234\213\166\155\327\361
\242\113\015\053\377\013\162\332\236\140\320\216\220\065\306\170
\125\207\040\241\317\345\155\012\310\111\174\061\230\063\154\042
\351\207\320\062\132\242\272\023\202\021\355\071\027\235\231\072
\162\241\346\372\244\331\325\027\061\165\256\205\175\042\256\077
\001\106\206\366\050\171\310\261\332\344\127\027\304\176\034\016
\260\264\222\246\126\263\275\262\227\355\252\247\360\267\305\250
\077\225\026\320\377\241\226\353\010\137\030\167\117\002\003\001
\000\001\243\143\060\141\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\105\353\242\257\364\222\313\202\061\055\121\213\247\247
\041\235\363\155\310\017\060\037\006\003\125\035\043\004\030\060
\026\200\024\105\353\242\257\364\222\313\202\061\055\121\213\247
\247\041\235\363\155\310\017\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\003\202\001\001\000\242\016\274\337\342
\355\360\343\162\163\172\144\224\277\367\162\146\330\062\344\102
\165\142\256\207\353\362\325\331\336\126\263\237\314\316\024\050
\271\015\227\140\134\022\114\130\344\323\075\203\111\105\130\227
\065\151\032\250\107\352\126\306\171\253\022\330\147\201\204\337
\177\011\074\224\346\270\046\054\040\275\075\263\050\211\367\137
\377\042\342\227\204\037\351\145\357\207\340\337\301\147\111\263
\135\353\262\011\052\353\046\355\170\276\175\077\053\363\267\046
\065\155\137\211\001\266\111\133\237\001\005\233\253\075\045\301
\314\266\177\302\361\157\206\306\372\144\150\353\201\055\224\353
\102\267\372\214\036\335\142\361\276\120\147\267\154\275\363\361
\037\153\014\066\007\026\177\067\174\251\133\155\172\361\022\106
\140\203\327\047\004\276\113\316\227\276\303\147\052\150\021\337
\200\347\014\063\146\277\023\015\024\156\363\177\037\143\020\036
\372\215\033\045\155\154\217\245\267\141\001\261\322\243\046\241
\020\161\235\255\342\303\371\303\231\121\267\053\007\010\316\056
\346\120\262\247\372\012\105\057\242\360\362

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert Assured ID Root CA"

Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US


```
# Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39
# Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C
# Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\005\143\270\143\015\142\327\132\273\310\253\036\113\337\265\250
\231\262\115\103
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\207\316\013\173\052\016\111\000\341\130\161\233\067\250\223\162
END
CKA_ISSUER
MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\014\347\340\345\027\330\106\376\217\345\140\374\033\360
\060\071
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Global Root CA"
#
# Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a
#
# Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
```

43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61

Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert Global Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221
\307\112

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\257\060\202\002\227\240\003\002\001\002\002\020\010
\073\340\126\220\102\106\261\241\165\152\311\131\221\307\112\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\141
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\103
\101\060\036\027\015\060\066\061\061\061\060\060\060\060\060\060
\060\132\027\015\063\061\061\061\061\060\060\060\060\060\060\060
\132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103
\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013
\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143

\157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147
\151\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157
\164\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\342\073\341\021\162\336\250\244\323\243\127
\252\120\242\217\013\167\220\311\242\245\356\022\316\226\133\001
\011\040\314\001\223\247\116\060\267\123\367\103\304\151\000\127
\235\342\215\042\335\207\006\100\000\201\011\316\316\033\203\277
\337\315\073\161\106\342\326\146\307\005\263\166\047\026\217\173
\236\036\225\175\356\267\110\243\010\332\326\257\172\014\071\006
\145\177\112\135\037\274\027\370\253\276\356\050\327\164\177\172
\170\231\131\205\150\156\134\043\062\113\277\116\300\350\132\155
\343\160\277\167\020\277\374\001\366\205\331\250\104\020\130\062
\251\165\030\325\321\242\276\107\342\047\152\364\232\063\370\111
\010\140\213\324\137\264\072\204\277\241\252\112\114\175\076\317
\117\137\154\166\136\240\113\067\221\236\334\042\346\155\316\024
\032\216\152\313\376\315\263\024\144\027\307\133\051\236\062\277
\362\356\372\323\013\102\324\253\267\101\062\332\014\324\357\370
\201\325\273\215\130\077\265\033\350\111\050\242\160\332\061\004
\335\367\262\026\362\114\012\116\007\250\355\112\075\136\265\177
\243\220\303\257\047\002\003\001\000\001\243\143\060\141\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\035\006\003\125\035\016\004\026\004\024\003\336\120\065\126\321
\114\273\146\360\243\342\033\033\303\227\262\075\321\125\060\037
\006\003\125\035\043\004\030\060\026\200\024\003\336\120\065\126
\321\114\273\146\360\243\342\033\033\303\227\262\075\321\125\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\001\001\000\313\234\067\252\110\023\022\012\372\335\104\234\117
\122\260\364\337\256\004\365\171\171\010\243\044\030\374\113\053
\204\300\055\271\325\307\376\364\301\037\130\313\270\155\234\172
\164\347\230\051\253\021\265\343\160\240\241\315\114\210\231\223
\214\221\160\342\253\017\034\276\223\251\377\143\325\344\007\140
\323\243\277\235\133\011\361\325\216\343\123\364\216\143\372\077
\247\333\264\146\337\142\146\326\321\156\101\215\362\055\265\352
\167\112\237\235\130\342\053\131\300\100\043\355\055\050\202\105
\076\171\124\222\046\230\340\200\110\250\067\357\360\326\171\140
\026\336\254\350\016\315\156\254\104\027\070\057\111\332\341\105
\076\052\271\066\123\317\072\120\006\367\056\350\304\127\111\154
\141\041\030\325\004\255\170\074\054\072\200\153\247\353\257\025
\024\351\330\211\301\271\070\154\342\221\154\212\377\144\271\167
\045\127\060\300\033\044\243\341\334\351\337\107\174\265\264\044
\010\005\060\354\055\275\013\277\105\277\120\271\251\363\353\230
\001\022\255\310\210\306\230\064\137\215\012\074\306\351\325\225
\225\155\336

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "DigiCert Global Root CA"
# Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a
# Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61
#
Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\250\230\135\072\145\345\345\304\262\327\326\155\100\306\335\057
\261\234\124\066
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\171\344\251\204\015\175\072\226\327\300\117\342\103\114\211\056
END
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221
\307\112
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert High Assurance EV Root CA"
#

```

```
# Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77
# Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Fri Nov 10 00:00:00 2006
# Not Valid After : Mon Nov 10 00:00:00 2031
# Fingerprint (SHA-256):
74:31:E5:F4:C3:C1:CE:46:90:77:4F:0B:61:E0:54:40:88:3B:A9:A0:1E:D0:0B:A6:AB:D7:80:6E:D3:B1:18:CF
# Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert High Assurance EV Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\002\254\134\046\152\013\100\233\217\013\171\362\256\106
\045\167
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\305\060\202\002\255\240\003\002\001\002\002\020\002
\254\134\046\152\013\100\233\217\013\171\362\256\106\045\167\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\154
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\053\060\051\006\003\125\004\003\023\042\104\151\147\151\103\145
```

\162\164\040\110\151\147\150\040\101\163\163\165\162\141\156\143
\145\040\105\126\040\122\157\157\164\040\103\101\060\036\027\015
\060\066\061\061\061\060\060\060\060\060\060\060\132\027\015\063
\061\061\061\061\060\060\060\060\060\060\060\132\060\154\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006
\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111
\156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167
\056\144\151\147\151\143\145\162\164\056\143\157\155\061\053\060
\051\006\003\125\004\003\023\042\104\151\147\151\103\145\162\164
\040\110\151\147\150\040\101\163\163\165\162\141\156\143\145\040
\105\126\040\122\157\157\164\040\103\101\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\306\314\345\163\346
\373\324\273\345\055\055\062\246\337\345\201\077\311\315\045\111
\266\161\052\303\325\224\064\147\242\012\034\260\137\151\246\100
\261\304\267\262\217\320\230\244\251\101\131\072\323\334\224\326
\074\333\164\070\244\112\314\115\045\202\367\112\245\123\022\070
\356\363\111\155\161\221\176\143\266\253\246\137\303\244\204\370
\117\142\121\276\370\305\354\333\070\222\343\006\345\010\221\014
\304\050\101\125\373\313\132\211\025\176\161\350\065\277\115\162
\011\075\276\072\070\120\133\167\061\033\215\263\307\044\105\232
\247\254\155\000\024\132\004\267\272\023\353\121\012\230\101\101
\042\116\145\141\207\201\101\120\246\171\134\211\336\031\112\127
\325\056\346\135\034\123\054\176\230\315\032\006\026\244\150\163
\320\064\004\023\134\241\161\323\132\174\125\333\136\144\341\067
\207\060\126\004\345\021\264\051\200\022\361\171\071\210\242\002
\021\174\047\146\267\210\267\170\362\312\012\250\070\253\012\144
\302\277\146\135\225\204\301\241\045\036\207\135\032\120\013\040
\022\314\101\273\156\013\121\070\270\113\313\002\003\001\000\001
\243\143\060\141\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024
\261\076\303\151\003\370\277\107\001\324\230\046\032\010\002\357
\143\144\053\303\060\037\006\003\125\035\043\004\030\060\026\200
\024\261\076\303\151\003\370\277\107\001\324\230\046\032\010\002
\357\143\144\053\303\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\034\032\006\227\334\327\234
\237\074\210\146\006\010\127\041\333\041\107\370\052\147\252\277
\030\062\166\100\020\127\301\212\363\172\331\021\145\216\065\372
\236\374\105\265\236\331\114\061\113\270\221\350\103\054\216\263
\170\316\333\343\123\171\161\326\345\041\224\001\332\125\207\232
\044\144\366\212\146\314\336\234\067\315\250\064\261\151\233\043
\310\236\170\042\053\160\103\343\125\107\061\141\031\357\130\305
\205\057\116\060\366\240\061\026\043\310\347\342\145\026\063\313
\277\032\033\240\075\370\312\136\213\061\213\140\010\211\055\014
\006\134\122\267\304\371\012\230\321\025\137\237\022\276\174\066
\143\070\275\104\244\177\344\046\053\012\304\227\151\015\351\214
\342\300\020\127\270\310\166\022\221\125\362\110\151\330\274\052

```
\002\133\017\104\324\040\061\333\364\272\160\046\135\220\140\236
\274\113\027\011\057\264\313\036\103\150\311\007\047\301\322\134
\367\352\041\271\150\022\234\074\234\277\236\374\200\134\233\143
\315\354\107\252\045\047\147\240\067\363\000\202\175\124\327\251
\370\351\056\023\243\167\350\037\112
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert High Assurance EV Root CA"

Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77

Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

Not Valid Before: Fri Nov 10 00:00:00 2006

Not Valid After : Mon Nov 10 00:00:00 2031

Fingerprint (SHA-256):

74:31:E5:F4:C3:C1:CE:46:90:77:4F:0B:61:E0:54:40:88:3B:A9:A0:1E:D0:0B:A6:AB:D7:80:6E:D3:B1:18:CF

Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert High Assurance EV Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\137\267\356\006\063\342\131\333\255\014\114\232\346\323\217\032
\141\307\334\045
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\324\164\336\127\134\071\262\323\234\205\203\305\300\145\111\212
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151
\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141
\156\143\145\040\105\126\040\122\157\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\002\254\134\046\152\013\100\233\217\013\171\362\256\106
\045\167
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION

```
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
```

```
# Certificate "SwissSign Gold CA - G2"
```

```
#
```

```
# Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
```

```
# Serial Number:00:bb:40:1c:43:f5:5e:4f:b0
```

```
# Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
```

```
# Not Valid Before: Wed Oct 25 08:30:35 2006
```

```
# Not Valid After : Sat Oct 25 08:30:35 2036
```

```
# Fingerprint (SHA-256):
```

```
62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95
```

```
# Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SwissSign Gold CA - G2"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\103\101\040\055\040\107\062
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\103\101\040\055\040\107\062
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\011\000\273\100\034\103\365\136\117\260
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\005\272\060\202\003\242\240\003\002\001\002\002\011\000
\273\100\034\103\365\136\117\260\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\060\105\061\013\060\011\006\003\125
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\037\060
\035\006\003\125\004\003\023\026\123\167\151\163\163\123\151\147
\156\040\107\157\154\144\040\103\101\040\055\040\107\062\060\036
```


\027\015\060\066\061\060\062\065\060\070\063\060\063\065\132\027
\015\063\066\061\060\062\065\060\070\063\060\063\065\132\060\105
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025\060
\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151\147
\156\040\101\107\061\037\060\035\006\003\125\004\003\023\026\123
\167\151\163\163\123\151\147\156\040\107\157\154\144\040\103\101
\040\055\040\107\062\060\202\002\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002
\012\002\202\002\001\000\257\344\356\176\213\044\016\022\156\251
\120\055\026\104\073\222\222\134\312\270\135\204\222\102\023\052
\274\145\127\202\100\076\127\044\315\120\213\045\052\267\157\374
\357\242\320\300\037\002\044\112\023\226\217\043\023\346\050\130
\000\243\107\307\006\247\204\043\053\273\275\226\053\177\125\314
\213\301\127\037\016\142\145\017\335\075\126\212\163\332\256\176
\155\272\201\034\176\102\214\040\065\331\103\115\204\372\204\333
\122\054\363\016\047\167\013\153\277\021\057\162\170\237\056\330
\076\346\030\067\132\052\162\371\332\142\220\222\225\312\037\234
\351\263\074\053\313\363\001\023\277\132\317\301\265\012\140\275
\335\265\231\144\123\270\240\226\263\157\342\046\167\221\214\340
\142\020\002\237\064\017\244\325\222\063\121\336\276\215\272\204
\172\140\074\152\333\237\053\354\336\336\001\077\156\115\345\120
\206\313\264\257\355\104\100\305\312\132\214\332\322\053\174\250
\356\276\246\345\012\252\016\245\337\005\122\267\125\307\042\135
\062\152\227\227\143\023\333\311\333\171\066\173\205\072\112\305
\122\211\371\044\347\235\167\251\202\377\125\034\245\161\151\053
\321\002\044\362\263\046\324\153\332\004\125\345\301\012\307\155
\060\067\220\052\344\236\024\063\136\026\027\125\305\133\265\313
\064\211\222\361\235\046\217\241\007\324\306\262\170\120\333\014
\014\013\174\013\214\101\327\271\351\335\214\210\367\243\115\262
\062\314\330\027\332\315\267\316\146\235\324\375\136\377\275\227
\076\051\165\347\176\247\142\130\257\045\064\245\101\307\075\274
\015\120\312\003\003\017\010\132\037\225\163\170\142\277\257\162
\024\151\016\245\345\003\016\170\216\046\050\102\360\007\013\142
\040\020\147\071\106\372\251\003\314\004\070\172\146\357\040\203
\265\214\112\126\216\221\000\374\216\134\202\336\210\240\303\342
\150\156\175\215\357\074\335\145\364\135\254\121\357\044\200\256
\252\126\227\157\371\255\175\332\141\077\230\167\074\245\221\266
\034\214\046\332\145\242\011\155\301\342\124\343\271\312\114\114
\200\217\167\173\140\232\036\337\266\362\110\036\016\272\116\124
\155\230\340\341\242\032\242\167\120\317\304\143\222\354\107\031
\235\353\346\153\316\301\002\003\001\000\001\243\201\254\060\201
\251\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\035\006\003\125\035\016\004\026\004\024\133\045\173
\226\244\145\121\176\270\071\363\300\170\146\136\350\072\347\360
\356\060\037\006\003\125\035\043\004\030\060\026\200\024\133\045
\173\226\244\145\121\176\270\071\363\300\170\146\136\350\072\347
\360\356\060\106\006\003\125\035\040\004\077\060\075\060\073\006

\011\140\205\164\001\131\001\002\001\001\060\056\060\054\006\010
\053\006\001\005\005\007\002\001\026\040\150\164\164\160\072\057
\057\162\145\160\157\163\151\164\157\162\171\056\163\167\151\163
\163\163\151\147\156\056\143\157\155\057\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\047\272
\343\224\174\361\256\300\336\027\346\345\330\325\365\124\260\203
\364\273\315\136\005\173\117\237\165\146\257\074\350\126\176\374
\162\170\070\003\331\053\142\033\000\271\370\351\140\315\314\316
\121\212\307\120\061\156\341\112\176\030\057\151\131\266\075\144
\201\053\343\203\204\346\042\207\216\175\340\356\002\231\141\270
\036\364\270\053\210\022\026\204\302\061\223\070\226\061\246\271
\073\123\077\303\044\223\126\133\151\222\354\305\301\273\070\000
\343\354\027\251\270\334\307\174\001\203\237\062\107\272\122\042
\064\035\062\172\011\126\247\174\045\066\251\075\113\332\300\202
\157\012\273\022\310\207\113\047\021\371\036\055\307\223\077\236
\333\137\046\153\122\331\056\212\361\024\306\104\215\025\251\267
\277\275\336\246\032\356\256\055\373\110\167\027\376\273\354\257
\030\365\052\121\360\071\204\227\225\154\156\033\303\053\304\164
\140\171\045\260\012\047\337\337\136\322\071\317\105\175\102\113
\337\263\054\036\305\306\135\312\125\072\240\234\151\232\217\332
\357\262\260\074\237\207\154\022\053\145\160\025\122\061\032\044
\317\157\061\043\120\037\214\117\217\043\303\164\101\143\034\125
\250\024\335\076\340\121\120\317\361\033\060\126\016\222\260\202
\205\330\203\313\042\144\274\055\270\045\325\124\242\270\006\352
\255\222\244\044\240\301\206\265\112\023\152\107\317\056\013\126
\225\124\313\316\232\333\152\264\246\262\333\101\010\206\047\167
\367\152\240\102\154\013\070\316\327\165\120\062\222\302\337\053
\060\042\110\320\325\101\070\045\135\244\351\135\237\306\224\165
\320\105\375\060\227\103\217\220\253\012\307\206\163\140\112\151
\055\336\245\170\327\006\332\152\236\113\076\167\072\040\023\042
\001\320\277\150\236\143\140\153\065\115\013\155\272\241\075\300
\223\340\177\043\263\125\255\162\045\116\106\371\322\026\357\260
\144\301\001\236\351\312\240\152\230\016\317\330\140\362\057\111
\270\344\102\341\070\065\026\364\310\156\117\367\201\126\350\272
\243\276\043\257\256\375\157\003\340\002\073\060\166\372\033\155
\101\317\001\261\351\270\311\146\364\333\046\363\072\244\164\362
\111\044\133\311\260\320\127\301\372\076\172\341\227\311

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "SwissSign Gold CA - G2"

Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

Serial Number:00:bb:40:1c:43:f5:5e:4f:b0

Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

Not Valid Before: Wed Oct 25 08:30:35 2006

```

# Not Valid
After : Sat Oct 25 08:30:35 2036
# Fingerprint (SHA-256):
62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95
# Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Gold CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\330\305\070\212\267\060\033\033\156\324\172\346\105\045\072\157
\237\032\047\141
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\044\167\331\250\221\321\073\372\210\055\302\377\370\315\063\223
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023
\026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\273\100\034\103\365\136\117\260
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SwissSign Silver CA - G2"
#
# Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH
# Serial Number:4f:1b:d4:2f:54:bb:2f:4b
# Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH
# Not Valid Before: Wed Oct 25 08:32:46 2006
# Not Valid After : Sat Oct 25 08:32:46 2036
# Fingerprint (SHA-256):
BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5
# Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "SwissSign Silver CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\103\101\040\055\040\107\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\117\033\324\057\124\273\057\113
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\275\060\202\003\245\240\003\002\001\002\002\010\117
\033\324\057\124\273\057\113\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\107\061\013\060\011\006\003\125\004
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014
\123\167\151\163\163\123\151\147\156\040\101\107\061\041\060\037
\006\003\125\004\003\023\030\123\167\151\163\163\123\151\147\156
\040\123\151\154\166\145\162\040\103\101\040\055\040\107\062\060
\036\027\015\060\066\061\060\062\065\060\070\063\062\064\066\132
\027\015\063\066\061\060\062\065\060\070\063\062\064\066\132\060
\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025
\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151
\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023\030
\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145\162
\040\103\101\040\055\040\107\062\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\304\361\207\177\323\170\061
\367\070\311\370\303\231\103\274\307\367\274\067\347\116\161\272
\113\217\245\163\035\134\156\230\256\003\127\256\070\067\103\057
\027\075\037\310\316\150\020\301\170\256\031\003\053\020\372\054
\171\203\366\350\271\150\271\125\362\004\104\247\071\371\374\004
\213\036\361\242\115\047\371\141\173\272\267\345\242\023\266\353
\141\076\320\154\321\346\373\372\136\355\035\264\236\240\065\133
\241\222\313\360\111\222\376\205\012\005\076\346\331\013\342\117
\273\334\225\067\374\221\351\062\065\042\321\037\072\116\047\205
\235\260\025\224\062\332\141\015\107\115\140\102\256\222\107\350
\203\132\120\130\351\212\213\271\135\241\334\335\231\112\037\066
```

\147\273\110\344\203\266\067\353\110\072\257\017\147\217\027\007
\350\004\312\357\152\061\207\324\300\266\371\224\161\173\147\144
\270\266\221\112\102\173\145\056\060\152\014\365\220\356\225\346
\362\315\202\354\331\241\112\354\366\262\113\345\105\205\346\155
\170\223\004\056\234\202\155\066\251\304\061\144\037\206\203\013
\052\364\065\012\170\311\125\317\101\260\107\351\060\237\231\276
\141\250\006\204\271\050\172\137\070\331\033\251\070\260\203\177
\163\301\303\073\110\052\202\017\041\233\270\314\250\065\303\204
\033\203\263\076\276\244\225\151\001\072\211\000\170\004\331\311
\364\231\031\253\126\176\133\213\206\071\025\221\244\020\054\011
\062\200\140\263\223\300\052\266\030\013\235\176\215\111\362\020
\112\177\371\325\106\057\031\222\243\231\247\046\254\273\214\074
\346\016\274\107\007\334\163\121\361\160\144\057\010\371\264\107
\035\060\154\104\352\051\067\205\222\150\146\274\203\070\376\173
\071\056\323\120\360\037\373\136\140\266\251\246\372\047\101\361
\233\030\162\362\365\204\164\112\311\147\304\124\256\110\144\337
\214\321\156\260\035\341\007\217\010\036\231\234\161\351\114\330
\245\367\107\022\037\164\321\121\236\206\363\302\242\043\100\013
\163\333\113\246\347\163\006\214\301\240\351\301\131\254\106\372
\346\057\370\317\161\234\106\155\271\304\025\215\070\171\003\105
\110\357\304\135\327\010\356\207\071\042\206\262\015\017\130\103
\367\161\251\110\056\375\352\326\037\002\003\001\000\001\243\201
\254\060\201\251\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024
\027\240\315\301\344\101\266\072\133\073\313\105\235\275\034\302
\230\372\206\130\060\037\006\003\125\035\043\004\030\060\026\200
\024\027\240\315\301\344\101\266\072\133\073\313\105\235\275\034
\302\230\372\206\130\060\106\006\003\125\035\040\004\077\060\075
\060\073\006\011\140\205\164\001\131\001\003\001\001\060\056\060
\054\006\010\053\006\001\005\005\007\002\001\026\040\150\164\164
\160\072\057\057\162\145\160\157\163\151\164\157\162\171\056\163
\167\151\163\163\163\151\147\156\056\143\157\155\057\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001
\000\163\306\201\340\047\322\055\017\340\225\060\342\232\101\177
\120\054\137\137\142\141\251\206\152\151\030\014\164\111\326\135
\204\352\101\122\030\157\130\255\120\126\040\152\306\275\050\151
\130\221\334\221\021\065\251\072\035\274\032\245\140\236\330\037
\177\105\221\151\331\176\273\170\162\301\006\017\052\316\217\205
\160\141\254\240\315\013\270\071\051\126\204\062\116\206\273\075
\304\052\331\327\037\162\356\376\121\241\042\101\261\161\002\143
\032\202\260\142\253\136\127\022\037\337\313\335\165\240\300\135
\171\220\214\033\340\120\346\336\061\376\230\173\160\137\245\220
\330\255\370\002\266\157\323\140\335\100\113\042\305\075\255\072
\172\237\032\032\107\221\171\063\272\202\334\062\151\003\226\156
\037\113\360\161\376\343\147\162\240\261\277\134\213\344\372\231
\042\307\204\271\033\215\043\227\077\355\045\340\317\145\273\365
\141\004\357\335\036\262\132\101\042\132\241\237\135\054\350\133

```
\311\155\251\014\014\170\252\140\306\126\217\001\132\014\150\274
\151\031\171\304\037\176\227\005\277\305\351\044\121\136\324\325
\113\123\355\331\043\132\066\003\145\243\301\003\255\101\060\363
\106\033\205\220\257\145\265\325\261\344\026\133\170\165\035\227
\172\155\131\251\052\217\173\336\303\207\211\020\231\111\163\170
\310\075\275\121\065\164\052\325\361\176\151\033\052\273\073\275
\045\270\232\132\075\162\141\220\146\207\356\014\326\115\324\021
\164\013\152\376\013\003\374\243\125\127\211\376\112\313\256\133
\027\005\310\362\215\043\061\123\070\322\055\152\077\202\271\215
\010\152\367\136\101\164\156\303\021\176\007\254\051\140\221\077
\070\312\127\020\015\275\060\057\307\245\346\101\240\332\256\005
\207\232\240\244\145\154\114\011\014\211\272\270\323\271\300\223
\212\060\372\215\345\232\153\025\001\116\147\252\332\142\126\076
\204\010\146\322\304\066\175\247\076\020\374\210\340\324\200\345
\000\275\252\363\116\006\243\172\152\371\142\162\343\011\117\353
\233\016\001\043\361\237\273\174\334\334\154\021\227\045\262\362
\264\143\024\322\006\052\147\214\203\365\316\352\007\330\232\152
\036\354\344\012\273\052\114\353\011\140\071\316\312\142\330\056
\156
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "SwissSign Silver CA - G2"

Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

Serial Number:4f:1b:d4:2f:54:bb:2f:4b

#

Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

Not Valid Before: Wed Oct 25 08:32:46 2006

Not Valid After : Sat Oct 25 08:32:46 2036

Fingerprint (SHA-256):

BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5

Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SwissSign Silver CA - G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\233\252\345\237\126\356\041\313\103\132\276\045\223\337\247\360
\100\321\035\313
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\340\006\241\311\175\317\311\374\015\300\126\165\226\330\142\023
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023
\030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\103\101\040\055\040\107\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\010\117\033\324\057\124\273\057\113
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "SecureTrust CA"

#

Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0

Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

Not Valid Before: Tue Nov 07 19:31:18 2006

Not Valid After : Mon Dec 31 19:40:55 2029

Fingerprint (SHA-256):

F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73

Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL

CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SecureTrust CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165
\162\145\124\162\165\163\164\040\103\101
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165
\162\145\124\162\165\163\164\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\\002\\020\\014\\360\\216\\134\\010\\026\\245\\255\\102\\177\\360\\353\\047\\030
\\131\\320
END
CKA_VALUE MULTILINE_OCTAL
\\060\\202\\003\\270\\060\\202\\002\\240\\240\\003\\002\\001\\002\\002\\020\\014
\\360\\216\\134\\010\\026\\245\\255\\102\\177\\360\\353\\047\\030\\131\\320\\060
\\015\\006\\011\\052\\206\\110\\206\\367\\015\\001\\001\\005\\005\\000\\060\\110
\\061\\013\\060\\011\\006\\003\\125\\004\\006\\023\\002\\125\\123\\061\\040\\060
\\036\\006\\003\\125\\004\\012\\023\\027\\123\\145\\143\\165\\162\\145\\124\\162
\\165\\163\\164\\040\\103\\157\\162\\160\\157\\162\\141\\164\\151\\157\\156\\061
\\027\\060\\025\\006\\003\\125\\004\\003\\023\\016\\123\\145\\143\\165\\162\\145
\\124\\162\\165\\163\\164\\040\\103\\101\\060\\036\\027\\015\\060\\066\\061\\061
\\060\\067\\061\\071\\063\\061\\061\\070\\132\\027\\015\\062\\071\\061\\062\\063
\\061\\061\\071\\064\\060\\065\\065\\132\\060\\110\\061\\013\\060\\011\\006\\003
\\125\\004\\006\\023\\002\\125\\123\\061\\040\\060\\036\\006\\003\\125\\004\\012
\\023\\027\\123\\145\\143\\165\\162\\145\\124\\162\\165\\163\\164\\040\\103\\157
\\162\\160\\157\\162\\141\\164\\151\\157\\156\\061\\027\\060\\025\\006\\003\\125
\\004\\003\\023\\016\\123\\145\\143\\165\\162\\145\\124\\162\\165\\163\\164\\040
\\103\\101\\060\\202\\001\\042\\060\\015\\006\\011\\052\\206\\110\\206\\367\\015
\\001\\001\\001\\005\\000\\003\\202\\001\\017\\000\\060\\202\\001\\012\\002\\202
\\001\\001\\000\\253\\244\\201\\345\\225\\315\\365\\366\\024\\216\\302\\117\\312
\\324\\342\\170\\225\\130\\234\\101\\341\\015\\231\\100\\044\\027\\071\\221\\063
\\146\\351\\276\\341\\203\\257\\142\\134\\211\\321\\374\\044\\133\\141\\263\\340
\\021\\021\\101\\034\\035\\156\\360\\270\\273\\370\\336\\247\\201\\272\\246\\110
\\306\\237\\035\\275\\276\\216\\251\\101\\076\\270\\224\\355\\051\\032\\324\\216
\\322\\003\\035\\003\\357\\155\\015\\147\\034\\127\\327\\006\\255\\312\\310\\365
\\376\\016\\257\\146\\045\\110\\004\\226\\013\\135\\243\\272\\026\\303\\010\\117
\\321\\106\\370\\024\\134\\362\\310\\136\\001\\231\\155\\375\\210\\314\\206\\250
\\301\\157\\061\\102\\154\\122\\076\\150\\313\\363\\031\\064\\337\\273\\207\\030
\\126\\200\\046\\304\\320\\334\\300\\157\\337\\336\\240\\302\\221\\026\\240\\144
\\021\\113\\104\\274\\036\\366\\347\\372\\143\\336\\146\\254\\166\\244\\161\\243
\\354\\066\\224\\150\\172\\167\\244\\261\\347\\016\\057\\201\\172\\342\\265\\162
\\206\\357\\242\\153\\213\\360\\017\\333\\323\\131\\077\\272\\162\\274\\104\\044
\\234\\343\\163\\263\\367\\257\\127\\057\\102\\046\\235\\251\\164\\272\\000\\122
\\362\\113\\315\\123\\174\\107\\013\\066\\205\\016\\146\\251\\010\\227\\026\\064
\\127\\301\\146\\367\\200\\343\\355\\160\\124\\307\\223\\340\\056\\050\\025\\131
\\207\\272\\273\\002\\003\\001\\000\\001\\243\\201\\235\\060\\201\\232\\060\\023
\\006\\011\\053\\006\\001\\004\\001\\202\\067\\024\\002\\004\\006\\036\\004\\000
\\103\\000\\101\\060\\013\\006\\003\\125\\035\\017\\004\\004\\003\\002\\001\\206
\\060\\017\\006\\003\\125\\035\\023\\001\\001\\377\\004\\005\\060\\003\\001\\001
\\377\\060\\035\\006\\003\\125\\035\\016\\004\\026\\004\\024\\102\\062\\266\\026
\\372\\004\\375\\376\\135\\113\\172\\303\\375\\367\\114\\100\\035\\132\\103\\257
\\060\\064\\006\\003\\125\\035\\037\\004\\055\\060\\053\\060\\051\\240\\047\\240
\\045\\206\\043\\150\\164\\164\\160\\072\\057\\057\\143\\162\\154\\056\\163\\145
\\143\\165\\162\\145\\164\\162\\165\\163\\164\\056\\143\\157\\155\\057\\123\\124
\\103\\101\\056\\143\\162\\154\\060\\020\\006\\011\\053\\006\\001\\004\\001\\202
\\067\\025\\001\\004\\003\\002\\001\\000\\060\\015\\006\\011\\052\\206\\110\\206


```
\367\015\001\001\005\005\000\003\202\001\001\000\060\355\117\112
\341\130\072\122\162\133\265\246\243\145\030\246\273\121\073\167
\351\235\352\323\237\134\340\105\145\173\015\312\133\342\160\120
\262\224\005\024\256\111\307\215\101\007\022\163\224\176\014\043
\041\375\274\020\177\140\020\132\162\365\230\016\254\354\271\177
\335\172\157\135\323\034\364\377\210\005\151\102\251\005\161\310
\267\254\046\350\056\264\214\152\377\161\334\270\261\337\231\274
\174\041\124\053\344\130\242\273\127\051\256\236\251\243\031\046
\017\231\056\010\260\357\375\151\317\231\032\011\215\343\247\237
\053\311\066\064\173\044\263\170\114\225\027\244\006\046\036\266
\144\122\066\137\140\147\331\234\305\005\164\013\347\147\043\322
\010\374\210\351\256\213\177\341\060\364\067\176\375\306\062\332
\055\236\104\060\060\154\356\007\336\322\064\374\322\377\100\366
\113\364\146\106\006\124\246\362\062\012\143\046\060\153\233\321
\334\213\107\272\341\271\325\142\320\242\240\364\147\005\170\051
\143\032\157\004\326\370\306\114\243\232\261\067\264\215\345\050
\113\035\236\054\302\270\150\274\355\002\356\061
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "SecureTrust CA"

#

Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0

Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

Not Valid Before: Tue Nov 07 19:31:18 2006

Not Valid After : Mon Dec 31 19:40:55 2029

Fingerprint (SHA-256):

F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73

Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SecureTrust CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\207\202\306\303\004\065\073\317\322\226\222\322\131\076\175\104
\331\064\377\021
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\334\062\303\247\155\045\127\307\150\011\235\352\055\251\242\321
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
```

```

\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165
\162\145\124\162\165\163\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\014\360\216\134\010\026\245\255\102\177\360\353\047\030
\131\320
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Secure Global CA"
#
# Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US
# Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5
# Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US
# Not Valid Before: Tue Nov 07 19:42:28 2006
# Not Valid After : Mon Dec 31 19:52:06 2029
# Fingerprint (SHA-256):
42:00:F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69
# Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Secure Global CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165
\162\145\040\107\154\157\142\141\154\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165
\162\145\040\107\154\157\142\141\154\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370
\352\245
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\003\274\060\202\002\244\240\003\002\001\002\002\020\007
\126\042\244\350\324\212\211\115\364\023\310\360\370\352\245\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\112
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\040\060
\036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162
\165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\031\060\027\006\003\125\004\003\023\020\123\145\143\165\162\145
\040\107\154\157\142\141\154\040\103\101\060\036\027\015\060\066
\061\061\060\067\061\071\064\062\062\070\132\027\015\062\071\061
\062\063\061\061\071\065\062\060\066\132\060\112\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\040\060\036\006\003\125
\004\012\023\027\123\145\143\165\162\145\124\162\165\163\164\040
\103\157\162\160\157\162\141\164\151\157\156\061\031\060\027\006
\003\125\004\003\023\020\123\145\143\165\162\145\040\107\154\157
\142\141\154\040\103\101\060\202\001\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202
\001\012\002\202\001\001\000\257\065\056\330\254\154\125\151\006
\161\345\023\150\044\263\117\330\314\041\107\370\361\140\070\211
\211\003\351\275\352\136\106\123\011\334\134\365\132\350\367\105
\052\002\353\061\141\327\051\063\114\316\307\174\012\067\176\017
\272\062\230\341\035\227\257\217\307\334\311\070\226\363\333\032
\374\121\355\150\306\320\156\244\174\044\321\256\102\310\226\120
\143\056\340\376\165\376\230\247\137\111\056\225\343\071\063\144
\216\036\244\137\220\322\147\074\262\331\376\101\271\125\247\011
\216\162\005\036\213\335\104\205\202\102\320\111\300\035\140\360
\321\027\054\225\353\366\245\301\222\243\305\302\247\010\140\015
\140\004\020\226\171\236\026\064\346\251\266\372\045\105\071\310
\036\145\371\223\365\252\361\122\334\231\230\075\245\206\032\014
\065\063\372\113\245\004\006\025\034\061\200\357\252\030\153\302
\173\327\332\316\371\063\040\325\365\275\152\063\055\201\004\373
\260\134\324\234\243\342\134\035\343\251\102\165\136\173\324\167
\357\071\124\272\311\012\030\033\022\231\111\057\210\113\375\120
\142\321\163\347\217\172\103\002\003\001\000\001\243\201\235\060
\201\232\060\023\006\011\053\006\001\004\001\202\067\024\002\004
\006\036\004\000\103\000\101\060\013\006\003\125\035\017\004\004
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024
\257\104\004\302\101\176\110\203\333\116\071\002\354\354\204\172
\346\316\311\244\060\064\006\003\125\035\037\004\055\060\053\060
\051\240\047\240\045\206\043\150\164\164\160\072\057\057\143\162
\154\056\163\145\143\165\162\145\164\162\165\163\164\056\143\157
\155\057\123\107\103\101\056\143\162\154\060\020\006\011\053\006
\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006\011

```
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000
\143\032\010\100\175\244\136\123\015\167\330\172\256\037\015\013
\121\026\003\357\030\174\310\343\257\152\130\223\024\140\221\262
\204\334\210\116\276\071\212\072\363\346\202\211\135\001\067\263
\253\044\244\025\016\222\065\132\112\104\136\116\127\372\165\316
\037\110\316\146\364\074\100\046\222\230\154\033\356\044\106\014
\027\263\122\245\333\245\221\221\317\067\323\157\347\047\010\072
\116\031\037\072\247\130\134\027\317\171\077\213\344\247\323\046
\043\235\046\017\130\151\374\107\176\262\320\215\213\223\277\051
\117\103\151\164\166\147\113\317\007\214\346\002\367\265\341\264
\103\265\113\055\024\237\371\334\046\015\277\246\107\164\006\330
\210\321\072\051\060\204\316\322\071\200\142\033\250\307\127\111
\274\152\125\121\147\025\112\276\065\007\344\325\165\230\067\171
\060\024\333\051\235\154\305\151\314\107\125\242\060\367\314\134
\177\302\303\230\034\153\116\026\200\353\172\170\145\105\242\000
\032\257\014\015\125\144\064\110\270\222\271\361\264\120\051\362
\117\043\037\332\154\254\037\104\341\335\043\170\121\133\307\026
END
```

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "Secure Global CA"

Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US

Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5

Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US

Not Valid Before: Tue Nov 07 19:42:28 2006

Not Valid After : Mon Dec 31 19:52:06 2029

Fingerprint (SHA-256):

42:00:F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69

Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Secure Global CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\072\104\163\132\345\201\220\037\044\206\141\106\036\073\234\304
\137\365\072\033
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\317\364\047\015\324\355\334\145\026\111\155\075\332\277\156\336
```

END

CKA_ISSUER

MULTILINE_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
```

```
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165
\162\145\040\107\154\157\142\141\154\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370
\352\245
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "COMODO Certification Authority"
#
# Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d
# Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Not Valid Before: Fri Dec 01 00:00:00 2006
# Not Valid After : Mon Dec 31 23:59:59 2029
# Fingerprint (SHA-256):
```

```
0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66
# Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
```

```
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
```

\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106
\345\075

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\035\060\202\003\005\240\003\002\001\002\002\020\116
\201\055\212\202\145\340\013\002\356\076\065\002\106\345\075\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\201\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033
\060\031\006\003\125\004\010\023\022\107\162\145\141\164\145\162
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006
\003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060
\030\006\003\125\004\012\023\021\103\117\115\117\104\117\040\103
\101\040\114\151\155\151\164\145\144\061\047\060\045\006\003\125
\004\003\023\036\103\117\115\117\104\117\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\060\036\027\015\060\066\061\062\060\061\060\060\060\060
\060\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065
\071\132\060\201\201\061\013\060\011\006\003\125\004\006\023\002
\107\102\061\033\060\031\006\003\125\004\010\023\022\107\162\145
\141\164\145\162\040\115\141\156\143\150\145\163\164\145\162\061
\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157\162
\144\061\032\060\030\006\003\125\004\012\023\021\103\117\115\117
\104\117\040\103\101\040\114\151\155\151\164\145\144\061\047\060
\045\006\003\125\004\003\023\036\103\117\115\117\104\117\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202
\001\012\002\202\001\001\000\320\100\213\213\162\343\221\033\367
\121\301\033\124\004\230\323\251\277\301\346\212\135\073\207\373
\273\210\316\015\343\057\077\006\226\360\242\051\120\231\256\333
\073\241\127\260\164\121\161\315\355\102\221\115\101\376\251\310
\330\152\206\167\104\273\131\146\227\120\136\264\324\054\160\104
\317\332\067\225\102\151\074\060\304\161\263\122\360\041\115\241
\330\272\071\174\034\236\243\044\235\362\203\026\230\252\026\174
\103\233\025\133\267\256\064\221\376\324\142\046\030\106\232\077
\353\301\371\361\220\127\353\254\172\015\213\333\162\060\152\146
\325\340\106\243\160\334\150\331\377\004\110\211\167\336\265\351
\373\147\155\101\351\274\071\275\062\331\142\002\361\261\250\075
\156\067\234\342\057\342\323\242\046\213\306\270\125\103\210\341

\043\076\245\322\044\071\152\107\253\000\324\241\263\251\045\376
\015\077\247\035\272\323\121\301\013\244\332\254\070\357\125\120
\044\005\145\106\223\064\117\055\215\255\306\324\041\031\322\216
\312\005\141\161\007\163\107\345\212\031\022\275\004\115\316\116
\234\245\110\254\273\046\367\002\003\001\000\001\243\201\216\060
\201\213\060\035\006\003\125\035\016\004\026\004\024\013\130\345
\213\306\114\025\067\244\100\251\060\251\041\276\107\066\132\126
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\111\006\003\125\035\037\004\102\060\100\060\076\240
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056
\143\157\155\157\144\157\143\141\056\143\157\155\057\103\117\115
\117\104\117\103\145\162\164\151\146\151\143\141\164\151\157\156
\101\165\164\150\157\162\151\164\171\056\143\162\154\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\076\230\236\233\366\033\351\327\071\267\170\256\035\162\030
\111\323\207\344\103\202\353\077\311\252\365\250\265\357\125\174
\041\122\145\371\325\015\341\154\364\076\214\223\163\221\056\002
\304\116\007\161\157\300\217\070\141\010\250\036\201\012\300\057
\040\057\101\213\221\334\110\105\274\361\306\336\272\166\153\063
\310\000\055\061\106\114\355\347\235\317\210\224\377\063\300\126
\350\044\206\046\270\330\070\070\337\052\153\335\022\314\307\077
\107\027\114\242\302\006\226\011\326\333\376\077\074\106\101\337
\130\342\126\017\074\073\301\034\223\065\331\070\122\254\356\310
\354\056\060\116\224\065\264\044\037\113\170\151\332\362\002\070
\314\225\122\223\360\160\045\131\234\040\147\304\356\371\213\127
\141\364\222\166\175\077\204\215\125\267\350\345\254\325\361\365
\031\126\246\132\373\220\034\257\223\353\345\034\324\147\227\135
\004\016\276\013\203\246\027\203\271\060\022\240\305\063\025\005
\271\015\373\307\005\166\343\330\112\215\374\064\027\243\306\041
\050\276\060\105\061\036\307\170\276\130\141\070\254\073\342\001
\145

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "COMODO Certification Authority"

Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB

Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d

Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB

Not Valid Before: Fri Dec 01 00:00:00 2006

Not Valid After : Mon Dec 31 23:59:59 2029

Fingerprint (SHA-256):

0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66

```

# Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\146\061\277\236\367\117\236\266\311\325\246\014\272\152\276\321
\367\275\357\173
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\134\110\334\367\102\162\354\126\224\155\034\314\161\065\200\165
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106
\345\075
END
CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "COMODO ECC Certification Authority"
#
# Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Serial Number:1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a
# Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Not Valid Before: Thu Mar 06 00:00:00 2008
# Not Valid After : Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7
# Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11

```



```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO ECC Certification Authority"
CKA_CERTIFICATE_TYPE
  CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143
\231\052
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\211\060\202\002\017\240\003\002\001\002\002\020\037
\107\257\252\142\000\160\120\124\114\001\236\233\143\231\052\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\205\061\013
\060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006
\003\125\004\010\023\022\107\162\145\141\164\145\162\040\115\141
\156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004
\007\023\007\123\141\154\146\157\162\144\061\032\060\030\006\003
\125\004\012\023\021\103\117\115\117\104\117\040\103\101\040\114
\151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023
\042\103\117\115\117\104\117\040\105\103\103\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\060\036\027\015\060\070\060\063\060\066\060\060\060
```

\060\060\060\132\027\015\063\070\060\061\061\070\062\063\065\071
\065\071\132\060\201\205\061\013\060\011\006\003\125\004\006\023
\002\107\102\061\033\060\031\006\003\125\004\010\023\022\107\162
\145\141\164\145\162\040\115\141\156\143\150\145\163\164\145\162
\061\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157
\162\144\061\032\060\030\006\003\125\004\012\023\021\103\117\115
\117\104\117\040\103\101\040\114\151\155\151\164\145\144\061\053
\060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\060\166\060\020\006
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003
\142\000\004\003\107\173\057\165\311\202\025\205\373\165\344\221
\026\324\253\142\231\365\076\122\013\006\316\101\000\177\227\341
\012\044\074\035\001\004\356\075\322\215\011\227\014\340\165\344
\372\373\167\212\052\365\003\140\113\066\213\026\043\026\255\011
\161\364\112\364\050\120\264\376\210\034\156\077\154\057\057\011
\131\133\245\133\013\063\231\342\303\075\211\371\152\054\357\262
\323\006\351\243\102\060\100\060\035\006\003\125\035\016\004\026
\004\024\165\161\247\031\110\031\274\235\235\352\101\107\337\224
\304\110\167\231\323\171\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075
\004\003\003\003\150\000\060\145\002\061\000\357\003\133\172\254
\267\170\012\162\267\210\337\377\265\106\024\011\012\372\240\346
\175\010\306\032\207\275\030\250\163\275\046\312\140\014\235\316
\231\237\317\134\017\060\341\276\024\061\352\002\060\024\364\223
\074\111\247\063\172\220\106\107\263\143\175\023\233\116\267\157
\030\067\200\123\376\335\040\340\065\232\066\321\307\001\271\346
\334\335\363\377\035\054\072\026\127\331\222\071\326

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "COMODO ECC Certification Authority"

Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

Serial Number:1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a

Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

Not Valid Before: Thu Mar 06 00:00:00 2008

Not Valid After : Mon Jan 18 23:59:59 2038

Fingerprint (SHA-256):

17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7

Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO ECC Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\237\164\116\237\053\115\272\354\017\061\054\120\266\126\073\216
\055\223\303\021
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\174\142\377\164\235\061\123\136\150\112\325\170\252\036\277\043
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143
\231\052
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "OISTE WISeKey Global Root GA CA"
#
# Issuer: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)
2005,O=WISeKey,C=CH
# Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a
# Subject: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)
2005,O=WISeKey,C=CH
# Not Valid Before: Sun Dec 11 16:03:44 2005
# Not Valid After : Fri Dec 11 16:09:51 2037
# Fingerprint (SHA-256):
41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5
# Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GA CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142
\141\154\040\122\157\157\164\040\107\101\040\103\101

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142
\141\154\040\122\157\157\164\040\107\101\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\101\075\162\307\364\153\037\201\103\175\361\322\050\124
\337\232

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\361\060\202\002\331\240\003\002\001\002\002\020\101
\075\162\307\364\153\037\201\103\175\361\322\050\124\337\232\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\212\061\013\060\011\006\003\125\004\006\023\002\103\110\061\020
\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145\171
\061\033\060\031\006\003\125\004\013\023\022\103\157\160\171\162
\151\147\150\164\040\050\143\051\040\062\060\060\065\061\042\060
\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157
\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163\145
\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124
\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154
\040\122\157\157\164\040\107\101\040\103\101\060\036\027\015\060
\065\061\062\061\061\061\066\060\063\064\064\132\027\015\063\067
\061\062\061\061\061\066\060\071\065\061\132\060\201\212\061\013
\060\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006

\003\125\004\012\023\007\127\111\123\145\113\145\171\061\033\060
\031\006\003\125\004\013\023\022\103\157\160\171\162\151\147\150
\164\040\050\143\051\040\062\060\060\065\061\042\060\040\006\003
\125\004\013\023\031\117\111\123\124\105\040\106\157\165\156\144
\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061\050
\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040\127
\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122\157
\157\164\040\107\101\040\103\101\060\202\001\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\313\117\263\000\233\075\066
\335\371\321\111\152\153\020\111\037\354\330\053\262\306\370\062
\201\051\103\225\114\232\031\043\041\025\105\336\343\310\034\121
\125\133\256\223\350\067\377\053\153\351\324\352\276\052\335\250
\121\053\327\146\303\141\134\140\002\310\365\316\162\173\073\270
\362\116\145\010\232\315\244\152\031\301\001\273\163\246\327\366
\303\335\315\274\244\213\265\231\141\270\001\242\243\324\115\324
\005\075\221\255\370\264\010\161\144\257\160\361\034\153\176\366
\303\167\235\044\163\173\344\014\214\341\331\066\341\231\213\005
\231\013\355\105\061\011\312\302\000\333\367\162\240\226\252\225
\207\320\216\307\266\141\163\015\166\146\214\334\033\264\143\242
\237\177\223\023\060\361\241\047\333\331\377\054\125\210\221\240
\340\117\007\260\050\126\214\030\033\227\104\216\211\335\340\027
\156\347\052\357\217\071\012\061\204\202\330\100\024\111\056\172
\101\344\247\376\343\144\314\301\131\161\113\054\041\247\133\175
\340\035\321\056\201\233\303\330\150\367\275\226\033\254\160\261
\026\024\013\333\140\271\046\001\005\002\003\001\000\001\243\121
\060\117\060\013\006\003\125\035\017\004\004\003\002\001\206\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\263\003\176\256\066
\274\260\171\321\334\224\046\266\021\276\041\262\151\206\224\060
\020\006\011\053\006\001\004\001\202\067\025\001\004\003\002\001
\000\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\113\241\377\013\207\156\263\371\301\103\261
\110\363\050\300\035\056\311\011\101\372\224\000\034\244\244\253
\111\117\217\075\036\357\115\157\275\274\244\366\362\046\060\311
\020\312\035\210\373\164\031\037\205\105\275\260\154\121\371\066
\176\333\365\114\062\072\101\117\133\107\317\350\013\055\266\304
\031\235\164\305\107\306\073\152\017\254\024\333\074\364\163\234
\251\005\337\000\334\164\170\372\370\065\140\131\002\023\030\174
\274\373\115\260\040\155\103\273\140\060\172\147\063\134\305\231
\321\370\055\071\122\163\373\214\252\227\045\134\162\331\010\036
\253\116\074\343\201\061\237\003\246\373\300\376\051\210\125\332
\204\325\120\003\266\342\204\243\246\066\252\021\072\001\341\030
\113\326\104\150\263\075\371\123\164\204\263\106\221\106\226\000
\267\200\054\266\341\343\020\342\333\242\347\050\217\001\226\142
\026\076\000\343\034\245\066\201\030\242\114\122\166\300\021\243
\156\346\035\272\343\132\276\066\123\305\076\165\217\206\151\051
\130\123\265\234\273\157\237\134\305\030\354\335\057\341\230\311

\374\276\337\012\015

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "OISTE WISEKey Global Root GA CA"

Issuer: CN=OISTE WISEKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c) 2005,O=WISEKey,C=CH

Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a

Subject: CN=OISTE WISEKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c) 2005,O=WISEKey,C=CH

Not Valid Before: Sun Dec 11 16:03:44 2005

Not Valid After : Fri

Dec 11 16:09:51 2037

Fingerprint (SHA-256):

41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5

Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "OISTE WISEKey Global Root GA CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\131\042\241\341\132\352\026\065\041\370\230\071\152\106\106\260
\104\033\017\251

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\274\154\121\063\247\351\323\146\143\124\025\162\033\041\222\223
END

CKA_ISSUER MULTILINE_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113
\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142
\141\154\040\122\157\157\164\040\107\101\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\101\075\162\307\364\153\037\201\103\175\361\322\050\124
\337\232

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Certigna"

#

Issuer: CN=Certigna,O=Dhimyotis,C=FR

Serial Number:00:fe:dc:e3:01:0f:c9:48:ff

Subject: CN=Certigna,O=Dhimyotis,C=FR

Not Valid Before: Fri Jun 29 15:13:05 2007

Not Valid After : Tue Jun 29 15:13:05 2027

Fingerprint (SHA-256):

E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D

Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certigna"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145
\162\164\151\147\156\141

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145
\162\164\151\147\156\141

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\011\000\376\334\343\001\017\311\110\377

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\250\060\202\002\220\240\003\002\001\002\002\011\000
\376\334\343\001\017\311\110\377\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\060\064\061\013\060\011\006\003\125
\004\006\023\002\106\122\061\022\060\020\006\003\125\004\012\014
\011\104\150\151\155\171\157\164\151\163\061\021\060\017\006\003
\125\004\003\014\010\103\145\162\164\151\147\156\141\060\036\027
\015\060\067\060\066\062\071\061\065\061\063\060\065\132\027\015
\062\067\060\066\062\071\061\065\061\063\060\065\132\060\064\061
\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060\020

\006\003\125\004\012\014\011\104\150\151\155\171\157\164\151\163
\061\021\060\017\006\003\125\004\003\014\010\103\145\162\164\151
\147\156\141\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\310\150\361\311\326\326\263\064\165\046\202\036
\354\264\276\352\134\341\046\355\021\107\141\341\242\174\026\170
\100\041\344\140\236\132\310\143\341\304\261\226\222\377\030\155
\151\043\341\053\142\367\335\342\066\057\221\007\271\110\317\016
\354\171\266\054\347\064\113\160\010\045\243\074\207\033\031\362
\201\007\017\070\220\031\323\021\376\206\264\362\321\136\036\036
\226\315\200\154\316\073\061\223\266\362\240\320\251\225\022\175
\245\232\314\153\310\204\126\212\063\251\347\042\025\123\026\360
\314\027\354\127\137\351\242\012\230\011\336\343\137\234\157\334
\110\343\205\013\025\132\246\272\237\254\110\343\011\262\367\364
\062\336\136\064\276\034\170\135\102\133\316\016\042\217\115\220
\327\175\062\030\263\013\054\152\277\216\077\024\021\211\040\016
\167\024\265\075\224\010\207\367\045\036\325\262\140\000\354\157
\052\050\045\156\052\076\030\143\027\045\077\076\104\040\026\366
\046\310\045\256\005\112\264\347\143\054\363\214\026\123\176\134
\373\021\032\010\301\106\142\237\042\270\361\302\215\151\334\372
\072\130\006\337\002\003\001\000\001\243\201\274\060\201\271\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\032\355\376\101\071
\220\264\044\131\276\001\362\122\325\105\366\132\071\334\021\060
\144\006\003\125\035\043\004\135\060\133\200\024\032\355\376\101
\071\220\264\044\131\276\001\362\122\325\105\366\132\071\334\021
\241\070\244\066\060\064\061\013\060\011\006\003\125\004\006\023
\002\106\122\061\022\060\020\006\003\125\004\012\014\011\104\150
\151\155\171\157\164\151\163\061\021\060\017\006\003\125\004\003
\014\010\103\145\162\164\151\147\156\141\202\011\000\376\334\343
\001\017\311\110\377\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\021\006\011\140\206\110\001\206\370\102
\001\001\004\004\003\002\000\007\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\001\001\000\205\003\036\222
\161\366\102\257\341\243\141\236\353\363\300\017\362\245\324\332
\225\346\326\276\150\066\075\176\156\037\114\212\357\321\017\041
\155\136\245\122\143\316\022\370\357\052\332\157\353\067\376\023
\002\307\313\073\076\042\153\332\141\056\177\324\162\075\335\060
\341\036\114\100\031\214\017\327\234\321\203\060\173\230\131\334
\175\306\271\014\051\114\241\063\242\353\147\072\145\204\323\226
\342\355\166\105\160\217\265\053\336\371\043\326\111\156\074\024
\265\306\237\065\036\120\320\301\217\152\160\104\002\142\313\256
\035\150\101\247\252\127\350\123\252\007\322\006\366\325\024\006
\013\221\003\165\054\154\162\265\141\225\232\015\213\271\015\347
\365\337\124\315\336\346\330\326\011\010\227\143\345\301\056\260
\267\104\046\300\046\300\257\125\060\236\073\325\066\052\031\004
\364\134\036\377\317\054\267\377\320\375\207\100\021\325\021\043
\273\110\300\041\251\244\050\055\375\025\370\260\116\053\364\060


```
\133\041\374\021\221\064\276\101\357\173\235\227\165\377\227\225
\300\226\130\057\352\273\106\327\273\344\331\056
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "Certigna"
# Issuer: CN=Certigna,O=Dhimyotis,C=FR
# Serial Number:00:fe:dc:e3:01:0f:c9:48:ff
# Subject: CN=Certigna,O=Dhimyotis,C=FR
# Not Valid Before: Fri Jun 29 15:13:05 2007
#
Not Valid After : Tue Jun 29 15:13:05 2027
# Fingerprint (SHA-256):
E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D
# Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\261\056\023\143\105\206\244\157\032\262\140\150\067\130\055\304
\254\375\224\227
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\253\127\246\133\175\102\202\031\265\330\130\046\050\136\375\377
END
CKA_ISSUER MULTILINE_OCTAL
\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145
\162\164\151\147\156\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\376\334\343\001\017\311\110\377
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ePKI Root Certification Authority"
#
```

```
# Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
# Serial Number:15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d
# Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
# Not Valid Before: Mon Dec 20 02:31:27 2004
# Not Valid After : Wed Dec 20 02:31:27 2034
# Fingerprint (SHA-256):
C0:A6:F4:DC:63:A2:4B:FD:CF:54:EF:2A:6A:08:2A:0A:72:DE:35:80:3E:2F:F5:FF:52:7A:E5:D8:72:06:DF:D5
# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\310\275\145\107\134\257\270\227\000\136\344\006\322
\274\235
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\260\060\202\003\230\240\003\002\001\002\002\020\025
\310\275\145\107\134\257\270\227\000\136\344\006\322\274\235\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\136
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164
\144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113
\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036
\027\015\060\064\061\062\062\060\060\062\063\061\062\067\132\027
\015\063\064\061\062\062\060\060\062\063\061\062\067\132\060\136
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\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164
\144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113
\111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\341
\045\017\356\215\333\210\063\165\147\315\255\037\175\072\116\155
\235\323\057\024\363\143\164\313\001\041\152\067\352\204\120\007
\113\046\133\011\103\154\041\236\152\310\325\003\365\140\151\217
\314\360\042\344\037\347\367\152\042\061\267\054\025\362\340\376
\000\152\103\377\207\145\306\265\032\301\247\114\155\042\160\041
\212\061\362\227\164\211\011\022\046\034\236\312\331\022\242\225
\074\332\351\147\277\010\240\144\343\326\102\267\105\357\227\364
\366\365\327\265\112\025\002\130\175\230\130\113\140\274\315\327
\015\232\023\063\123\321\141\371\172\325\327\170\263\232\063\367
\000\206\316\035\115\224\070\257\250\354\170\121\160\212\134\020
\203\121\041\367\021\075\064\206\136\345\110\315\227\201\202\065
\114\031\354\145\366\153\305\005\241\356\107\023\326\263\041\047
\224\020\012\331\044\073\272\276\104\023\106\060\077\227\074\330
\327\327\152\356\073\070\343\053\324\227\016\271\033\347\007\111
\177\067\052\371\167\170\317\124\355\133\106\235\243\200\016\221
\103\301\326\133\137\024\272\237\246\215\044\107\100\131\277\162
\070\262\066\154\067\377\231\321\135\016\131\012\253\151\367\300
\262\004\105\172\124\000\256\276\123\366\265\347\341\370\074\243
\061\322\251\376\041\122\144\305\246\147\360\165\007\006\224\024
\201\125\306\047\344\001\217\027\301\152\161\327\276\113\373\224
\130\175\176\021\063\261\102\367\142\154\030\326\317\011\150\076
\177\154\366\036\217\142\255\245\143\333\011\247\037\042\102\101
\036\157\231\212\076\327\371\077\100\172\171\260\245\001\222\322
\235\075\010\025\245\020\001\055\263\062\166\250\225\015\263\172
\232\373\007\020\170\021\157\341\217\307\272\017\045\032\164\052
\345\034\230\101\231\337\041\207\350\225\006\152\012\263\152\107
\166\145\366\072\317\217\142\027\031\173\012\050\315\032\322\203
\036\041\307\054\277\276\377\141\150\267\147\033\273\170\115\215
\316\147\345\344\301\216\267\043\146\342\235\220\165\064\230\251
\066\053\212\232\224\271\235\354\314\212\261\370\045\211\134\132
\266\057\214\037\155\171\044\247\122\150\303\204\065\342\146\215
\143\016\045\115\325\031\262\346\171\067\247\042\235\124\061\002
\003\001\000\001\243\152\060\150\060\035\006\003\125\035\016\004
\026\004\024\036\014\367\266\147\362\341\222\046\011\105\300\125
\071\056\167\077\102\112\242\060\014\006\003\125\035\023\004\005
\060\003\001\001\377\060\071\006\004\147\052\007\000\004\061\060
\057\060\055\002\001\000\060\011\006\005\053\016\003\002\032\005
\000\060\007\006\005\147\052\003\000\000\004\024\105\260\302\307
\012\126\174\356\133\170\014\225\371\030\123\301\246\034\330\020
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003

\202\002\001\000\011\263\203\123\131\001\076\225\111\271\361\201
\272\371\166\040\043\265\047\140\164\324\152\231\064\136\154\000
\123\331\237\362\246\261\044\007\104\152\052\306\245\216\170\022
\350\107\331\130\033\023\052\136\171\233\237\012\052\147\246\045
\077\006\151\126\163\303\212\146\110\373\051\201\127\164\006\312
\234\352\050\350\070\147\046\053\361\325\265\077\145\223\370\066
\135\216\215\215\100\040\207\031\352\357\047\300\075\264\071\017
\045\173\150\120\164\125\234\014\131\175\132\075\101\224\045\122
\010\340\107\054\025\061\031\325\277\007\125\306\273\022\265\227
\364\137\203\205\272\161\301\331\154\201\021\166\012\012\260\277
\202\227\367\352\075\372\372\354\055\251\050\224\073\126\335\322
\121\056\256\300\275\010\025\214\167\122\064\226\326\233\254\323
\035\216\141\017\065\173\233\256\071\151\013\142\140\100\040\066
\217\257\373\066\356\055\010\112\035\270\277\233\134\370\352\245
\033\240\163\246\330\370\156\340\063\004\137\150\252\047\207\355
\331\301\220\234\355\275\343\152\065\257\143\337\253\030\331\272
\346\351\112\352\120\212\017\141\223\036\342\055\031\342\060\224
\065\222\135\016\266\007\257\031\200\217\107\220\121\113\056\115
\335\205\342\322\012\122\012\027\232\374\032\260\120\002\345\001
\243\143\067\041\114\104\304\233\121\231\021\016\163\234\006\217
\124\056\247\050\136\104\071\207\126\055\067\275\205\104\224\341
\014\113\054\234\303\222\205\064\141\313\017\270\233\112\103\122
\376\064\072\175\270\351\051\334\166\251\310\060\370\024\161\200
\306\036\066\110\164\042\101\134\207\202\350\030\161\213\101\211
\104\347\176\130\133\250\270\215\023\351\247\154\303\107\355\263
\032\235\142\256\215\202\352\224\236\335\131\020\303\255\335\342
\115\343\061\325\307\354\350\362\260\376\222\036\026\012\032\374
\331\363\370\047\266\311\276\035\264\154\144\220\177\364\344\304
\133\327\067\256\102\016\335\244\032\157\174\210\124\305\026\156
\341\172\150\056\370\072\277\015\244\074\211\073\170\247\116\143
\203\004\041\010\147\215\362\202\111\320\133\375\261\315\017\203
\204\324\076\040\205\367\112\075\053\234\375\052\012\011\115\352
\201\370\021\234

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "ePKI Root Certification Authority"

Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

Serial Number:15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d

Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW

Not Valid Before: Mon Dec 20 02:31:27 2004

Not Valid After : Wed Dec 20 02:31:27 2034

Fingerprint (SHA-256):

C0:A6:F4:DC:63:A2:4B:FD:CF:54:EF:2A:6A:08:2A:0A:72:DE:35:80:3E:2F:F5:FF:52:7A:E5:D8:72:06:DF:D5

```
# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI Root Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\147\145\015\361\176\216\176\133\202\100\244\364\126\113\317\342
\075\151\306\360
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\033\056\000\312\046\006\220\075\255\376\157\025\150\323\153\263
END
CKA_ISSUER
MULTILINE_OCTAL
\060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\310\275\145\107\134\257\270\227\000\136\344\006\322
\274\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
```

```
# Certificate "certSIGN ROOT CA"
```

```
#
```

```
# Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO
```

```
# Serial Number:20:06:05:16:70:02
```

```
# Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO
```

```
# Not Valid Before: Tue Jul 04 17:20:04
```

```
2006
```

```
# Not Valid After : Fri Jul 04 17:20:04 2031
```

```
# Fingerprint (SHA-256):
```

```
EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB
```

```
# Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "certSIGN ROOT CA"
```

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162
\164\123\111\107\116\040\122\117\117\124\040\103\101

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162
\164\123\111\107\116\040\122\117\117\124\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\006\040\006\005\026\160\002

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\070\060\202\002\040\240\003\002\001\002\002\006\040
\006\005\026\160\002\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\060\073\061\013\060\011\006\003\125\004\006\023
\002\122\117\061\021\060\017\006\003\125\004\012\023\010\143\145
\162\164\123\111\107\116\061\031\060\027\006\003\125\004\013\023
\020\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103
\101\060\036\027\015\060\066\060\067\060\064\061\067\062\060\060
\064\132\027\015\063\061\060\067\060\064\061\067\062\060\060\064
\132\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117
\061\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123
\111\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145
\162\164\123\111\107\116\040\122\117\117\124\040\103\101\060\202
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\267
\063\271\176\310\045\112\216\265\333\264\050\033\252\127\220\350
\321\042\323\144\272\323\223\350\324\254\206\141\100\152\140\127
\150\124\204\115\274\152\124\002\005\377\337\233\232\052\256\135
\007\217\112\303\050\177\357\373\053\372\171\361\307\255\360\020
\123\044\220\213\146\311\250\210\253\257\132\243\000\351\276\272
\106\356\133\163\173\054\027\202\201\136\142\054\241\002\145\263
\275\305\053\000\176\304\374\003\063\127\015\355\342\372\316\135
\105\326\070\315\065\266\262\301\320\234\201\112\252\344\262\001
\134\035\217\137\231\304\261\255\333\210\041\353\220\010\202\200
\363\060\243\103\346\220\202\256\125\050\111\355\133\327\251\020
\070\016\376\217\114\133\233\106\352\101\365\260\010\164\303\320
\210\063\266\174\327\164\337\334\204\321\103\016\165\071\241\045
\100\050\352\170\313\016\054\056\071\235\214\213\156\026\034\057
\046\202\020\342\343\145\224\012\004\300\136\367\135\133\370\020
\342\320\272\172\113\373\336\067\000\000\032\133\050\343\322\234

\163\076\062\207\230\241\311\121\057\327\336\254\063\263\117\002
\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\306\060\035\006\003\125\035\016
\004\026\004\024\340\214\233\333\045\111\263\361\174\206\326\262
\102\207\013\320\153\240\331\344\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\001\001\000\076\322\034\211
\056\065\374\370\165\335\346\177\145\210\364\162\114\311\054\327
\062\116\363\335\031\171\107\275\216\073\133\223\017\120\111\044
\023\153\024\006\162\357\011\323\241\241\343\100\204\311\347\030
\062\164\074\110\156\017\237\113\324\367\036\323\223\206\144\124
\227\143\162\120\325\125\317\372\040\223\002\242\233\303\043\223
\116\026\125\166\240\160\171\155\315\041\037\317\057\055\274\031
\343\210\061\370\131\032\201\011\310\227\246\164\307\140\304\133
\314\127\216\262\165\375\033\002\011\333\131\157\162\223\151\367
\061\101\326\210\070\277\207\262\275\026\171\371\252\344\276\210
\045\335\141\047\043\034\265\061\007\004\066\264\032\220\275\240
\164\161\120\211\155\274\024\343\017\206\256\361\253\076\307\240
\011\314\243\110\321\340\333\144\347\222\265\317\257\162\103\160
\213\371\303\204\074\023\252\176\222\233\127\123\223\372\160\302
\221\016\061\371\233\147\135\351\226\070\136\137\263\163\116\210
\025\147\336\236\166\020\142\040\276\125\151\225\103\000\071\115
\366\356\260\132\116\111\104\124\130\137\102\203

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "certSIGN ROOT CA"

Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO

Serial Number:20:06:05:16:70:02

Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO

Not Valid Before: Tue Jul 04 17:20:04 2006

Not Valid After : Fri Jul 04 17:20:04 2031

Fingerprint (SHA-256):

EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB

#

Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "certSIGN ROOT CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\372\267\356\066\227\046\142\373\055\260\052\366\277\003\375\350

\174\113\057\233

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\030\230\300\326\351\072\374\371\260\365\014\367\113\001\104\027
END
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162
\164\123\111\107\116\040\122\117\117\124\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\040\006\005\026\160\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "NetLock Arany (Class Gold) Ftanúsítvány"
#
# Issuer: CN=NetLock Arany (Class Gold) F..tan...s..tv...ny,OU=Tan...s..tv...nykiad..k (Certification
Services),O=NetLock Kft.,L=Budapest,C=HU
# Serial Number:49:41:2c:e4:00:10
# Subject: CN=NetLock Arany (Class Gold) F..tan...s..tv...ny,OU=Tan...s..tv...nykiad..k (Certification
Services),O=NetLock Kft.,L=Budapest,C=HU
# Not Valid Before: Thu Dec 11 15:08:21 2008
# Not Valid After : Wed Dec 06 15:08:21 2028
# Fingerprint (SHA-256):
6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98
# Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303
```



```
\272\163\303\255\164\166\303\241\156\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303
\272\163\303\255\164\166\303\241\156\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\006\111\101\054\344\000\020
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\025\060\202\002\375\240\003\002\001\002\002\006\111
\101\054\344\000\020\060\015\006\011\052\206\110\206\367\015\001
\001\013\005\000\060\201\247\061\013\060\011\006\003\125\004\006
\023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102
\165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012
\014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067
\060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303
\255\164\166\303\241\156\171\153\151\141\144\303\263\153\040\050
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\051\061\065\060\063\006\003\125\004\003
\014\054\116\145\164\114\157\143\153\040\101\162\141\156\171\040
\050\103\154\141\163\163\040\107\157\154\144\051\040\106\305\221
\164\141\156\303\272\163\303\255\164\166\303\241\156\171\060\036
\027\015\060\070\061\062\061\061\061\065\060\070\062\061\132\027
\015\062\070\061\062\060\066\061\065\060\070\062\061\132\060\201
\247\061\013\060\011\006\003\125\004\006\023\002\110\125\061\021
\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145\163
\164\061\025\060\023\006\003\125\004\012\014\014\116\145\164\114
\157\143\153\040\113\146\164\056\061\067\060\065\006\003\125\004
\013\014\056\124\141\156\303\272\163\303\255\164\166\303\241\156
\171\153\151\141\144\303\263\153\040\050\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163
\051\061\065\060\063\006\003\125\004\003\014\054\116\145\164\114
\157\143\153\040\101\162\141\156\171\040\050\103\154\141\163\163
\040\107\157\154\144\051\040\106\305\221\164\141\156\303\272\163
\303\255\164\166\303\241\156\171\060\202\001\042\060\015\006\011
```

\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\304\044\136\163\276\113\155
\024\303\241\364\343\227\220\156\322\060\105\036\074\356\147\331
\144\340\032\212\177\312\060\312\203\343\040\301\343\364\072\323
\224\137\032\174\133\155\277\060\117\204\047\366\237\037\111\274
\306\231\012\220\362\017\365\177\103\204\067\143\121\213\172\245
\160\374\172\130\315\216\233\355\303\106\154\204\160\135\332\363
\001\220\043\374\116\060\251\176\341\047\143\347\355\144\074\240
\270\311\063\143\376\026\220\377\260\270\375\327\250\300\300\224
\103\013\266\325\131\246\236\126\320\044\037\160\171\257\333\071
\124\015\145\165\331\025\101\224\001\257\136\354\366\215\361\377
\255\144\376\040\232\327\134\353\376\246\037\010\144\243\213\166
\125\255\036\073\050\140\056\207\045\350\252\257\037\306\144\106
\040\267\160\177\074\336\110\333\226\123\267\071\167\344\032\342
\307\026\204\166\227\133\057\273\031\025\205\370\151\205\365\231
\247\251\362\064\247\251\266\246\003\374\157\206\075\124\174\166
\004\233\153\371\100\135\000\064\307\056\231\165\235\345\210\003
\252\115\370\003\322\102\166\300\033\002\003\000\250\213\243\105
\060\103\060\022\006\003\125\035\023\001\001\377\004\010\060\006
\001\001\377\002\001\004\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004
\024\314\372\147\223\360\266\270\320\245\300\036\363\123\375\214
\123\337\203\327\226\060\015\006\011\052\206\110\206\367\015\001
\001\013\005\000\003\202\001\001\000\253\177\356\034\026\251\234
\074\121\000\240\300\021\010\005\247\231\346\157\001\210\124\141
\156\361\271\030\255\112\255\376\201\100\043\224\057\373\165\174
\057\050\113\142\044\201\202\013\365\141\361\034\156\270\141\070
\353\201\372\142\241\073\132\142\323\224\145\304\341\346\155\202
\370\057\045\160\262\041\046\301\162\121\037\214\054\303\204\220
\303\132\217\272\317\364\247\145\245\353\230\321\373\005\262\106
\165\025\043\152\157\205\143\060\200\360\325\236\037\051\034\302
\154\260\120\131\135\220\133\073\250\015\060\317\277\175\177\316
\361\235\203\275\311\106\156\040\246\371\141\121\272\041\057\173
\276\245\025\143\241\324\225\207\361\236\271\363\211\363\075\205
\270\270\333\276\265\271\051\371\332\067\005\000\111\224\003\204
\104\347\277\103\061\317\165\213\045\321\364\246\144\365\222\366
\253\005\353\075\351\245\013\066\142\332\314\006\137\066\213\266
\136\061\270\052\373\136\366\161\337\104\046\236\304\346\015\221
\264\056\165\225\200\121\152\113\060\246\260\142\241\223\361\233
\330\316\304\143\165\077\131\107\261

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "NetLock Arany (Class Gold) Ftanúsítvány"

Issuer:

```
CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock
Kft.,L=Budapest,C=HU
# Serial Number:49:41:2c:e4:00:10
# Subject: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification
Services),O=NetLock Kft.,L=Budapest,C=HU
# Not Valid Before: Thu Dec 11 15:08:21 2008
# Not Valid After : Wed Dec 06 15:08:21 2028
# Fingerprint (SHA-256):
6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98
# Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\010\077\131\077\025\241\004\240\151\244\153\251\003\320\006
\267\227\011\221
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\241\267\377\163\335\326\327\064\062\030\337\374\074\255\210
END
CKA_ISSUER
MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145
\164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303
\272\163\303\255\164\166\303\241\156\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\006\111\101\054\344\000\020
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "Hongkong Post Root CA 1"
#
```

```
# Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
# Serial Number: 1000 (0x3e8)
# Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
# Not Valid Before: Thu May 15 05:13:14 2003
# Not Valid After : Mon May 15 04:52:29 2023
# Fingerprint (SHA-256):
F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2
# Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\003\350
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\060\060\202\002\030\240\003\002\001\002\002\002\003
\350\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061\060\036\027\015\060\063\060
\065\061\065\060\065\061\063\061\064\132\027\015\062\063\060\065
\061\065\060\064\065\062\062\071\132\060\107\061\013\060\011\006
\003\125\004\006\023\002\110\113\061\026\060\024\006\003\125\004
\012\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164
\061\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153
\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101
\040\061\060\202\001\042\060\015\006\011\052\206\110\206\367\015
```

\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\254\377\070\266\351\146\002\111\343\242\264\341\220
\371\100\217\171\371\342\275\171\376\002\275\356\044\222\035\042
\366\332\205\162\151\376\327\077\011\324\335\221\265\002\234\320
\215\132\341\125\303\120\206\271\051\046\302\343\331\240\361\151
\003\050\040\200\105\042\055\126\247\073\124\225\126\042\131\037
\050\337\037\040\075\155\242\066\276\043\240\261\156\265\261\047
\077\071\123\011\352\253\152\350\164\262\302\145\134\216\277\174
\303\170\204\315\236\026\374\365\056\117\040\052\010\237\167\363
\305\036\304\232\122\146\036\110\136\343\020\006\217\042\230\341
\145\216\033\135\043\146\073\270\245\062\121\310\206\252\241\251
\236\177\166\224\302\246\154\267\101\360\325\310\006\070\346\324
\014\342\363\073\114\155\120\214\304\203\047\301\023\204\131\075
\236\165\164\266\330\002\136\072\220\172\300\102\066\162\354\152
\115\334\357\304\000\337\023\030\127\137\046\170\310\326\012\171
\167\277\367\257\267\166\271\245\013\204\027\135\020\352\157\341
\253\225\021\137\155\074\243\134\115\203\133\362\263\031\212\200
\213\013\207\002\003\001\000\001\243\046\060\044\060\022\006\003
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\003
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\306
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\016\106\325\074\256\342\207\331\136\201\213\002
\230\101\010\214\114\274\332\333\356\047\033\202\347\152\105\354
\026\213\117\205\240\363\262\160\275\132\226\272\312\156\155\356
\106\213\156\347\052\056\226\263\031\063\353\264\237\250\262\067
\356\230\250\227\266\056\266\147\047\324\246\111\375\034\223\145
\166\236\102\057\334\042\154\232\117\362\132\025\071\261\161\327
\053\121\350\155\034\230\300\331\052\364\241\202\173\325\311\101
\242\043\001\164\070\125\213\017\271\056\147\242\040\004\067\332
\234\013\323\027\041\340\217\227\171\064\157\204\110\002\040\063
\033\346\064\104\237\221\160\364\200\136\204\103\302\051\322\154
\022\024\344\141\215\254\020\220\236\204\120\273\360\226\157\105
\237\212\363\312\154\117\372\021\072\025\025\106\303\315\037\203
\133\055\101\022\355\120\147\101\023\075\041\253\224\212\252\116
\174\301\261\373\247\326\265\047\057\227\253\156\340\035\342\321
\034\054\037\104\342\374\276\221\241\234\373\326\051\123\163\206
\237\123\330\103\016\135\326\143\202\161\035\200\164\312\366\342
\002\153\331\132

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Hongkong Post Root CA

1"

Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK

Serial Number: 1000 (0x3e8)

```
# Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
# Not Valid Before: Thu May 15 05:13:14 2003
# Not Valid After : Mon May 15 04:52:29 2023
# Fingerprint (SHA-256):
F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2
# Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\326\332\250\040\215\011\322\025\115\044\265\057\313\064\156\262
\130\262\212\130
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\250\015\157\071\170\271\103\155\167\102\155\230\132\314\043\312
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\003\350
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SecureSign RootCA11"
#
# Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
# Serial Number: 1 (0x1)
# Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
# Not Valid Before: Wed Apr 08 04:56:47 2009
# Not Valid After : Sun Apr 08 04:56:47 2029
# Fingerprint (SHA-256):
BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12
# Fingerprint (SHA1): 3B:C4:9F:48:F8:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
```

```
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SecureSign RootCA11"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\155\060\202\002\125\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061\053
\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145\162
\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032\006
\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147\156
\040\122\157\157\164\103\101\061\061\060\036\027\015\060\071\060
\064\060\070\060\064\065\066\064\067\132\027\015\062\071\060\064
\060\070\060\064\065\066\064\067\132\060\130\061\013\060\011\006
\003\125\004\006\023\002\112\120\061\053\060\051\006\003\125\004
\012\023\042\112\141\160\141\156\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163\054
\040\111\156\143\056\061\034\060\032\006\003\125\004\003\023\023
\123\145\143\165\162\145\123\151\147\156\040\122\157\157\164\103
\101\061\061\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\375\167\252\245\034\220\005\073\313\114\233\063
\213\132\024\105\244\347\220\026\321\337\127\322\041\020\244\027
\375\337\254\326\037\247\344\333\174\367\354\337\270\003\332\224
\130\375\135\162\174\214\077\137\001\147\164\025\226\343\002\074
```

\207\333\256\313\001\216\302\363\146\306\205\105\364\002\306\072
\265\142\262\257\372\234\277\244\346\324\200\060\230\363\015\266
\223\217\251\324\330\066\362\260\374\212\312\054\241\025\063\225
\061\332\300\033\362\356\142\231\206\143\077\277\335\223\052\203
\250\166\271\023\037\267\316\116\102\205\217\042\347\056\032\362
\225\011\262\005\265\104\116\167\241\040\275\251\362\116\012\175
\120\255\365\005\015\105\117\106\161\375\050\076\123\373\004\330
\055\327\145\035\112\033\372\317\073\260\061\232\065\156\310\213
\006\323\000\221\362\224\010\145\114\261\064\006\000\172\211\342
\360\307\003\131\317\325\326\350\247\062\263\346\230\100\206\305
\315\047\022\213\314\173\316\267\021\074\142\140\007\043\076\053
\100\156\224\200\011\155\266\263\157\167\157\065\010\120\373\002
\207\305\076\211\002\003\001\000\001\243\102\060\100\060\035\006
\003\125\035\016\004\026\004\024\133\370\115\117\262\245\206\324
\072\322\361\143\232\240\276\011\366\127\267\336\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\240\241\070\026\146\056\247\126\037\041\234\006\372\035\355
\271\042\305\070\046\330\116\117\354\243\177\171\336\106\041\241
\207\167\217\007\010\232\262\244\305\257\017\062\230\013\174\146
\051\266\233\175\045\122\111\103\253\114\056\053\156\172\160\257
\026\016\343\002\154\373\102\346\030\235\105\330\125\310\350\073
\335\347\341\364\056\013\034\064\134\154\130\112\373\214\210\120
\137\225\034\277\355\253\042\265\145\263\205\272\236\017\270\255
\345\172\033\212\120\072\035\275\015\274\173\124\120\013\271\102
\257\125\240\030\201\255\145\231\357\276\344\234\277\304\205\253
\101\262\124\157\334\045\315\355\170\342\216\014\215\011\111\335
\143\173\132\151\226\002\041\250\275\122\131\351\175\065\313\310
\122\312\177\201\376\331\153\323\367\021\355\045\337\370\347\371
\244\372\162\227\204\123\015\245\320\062\030\121\166\131\024\154
\017\353\354\137\200\214\165\103\203\303\205\230\377\114\236\055
\015\344\167\203\223\116\265\226\007\213\050\023\233\214\031\215
\101\047\111\100\356\336\346\043\104\071\334\241\042\326\272\003
\362

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "SecureSign RootCA11"

Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP

Serial Number: 1 (0x1)

Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP

#

Not Valid Before: Wed Apr 08 04:56:47 2009

Not Valid After : Sun Apr 08 04:56:47 2029


```

# Fingerprint (SHA-256):
BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12
# Fingerprint (SHA1): 3B:C4:9F:48:F8:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SecureSign RootCA11"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\073\304\237\110\370\363\163\240\234\036\275\370\133\261\303\145
\307\330\021\263
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\267\122\164\342\222\264\200\223\362\165\344\314\327\362\352\046
END
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Microsec e-Szigno Root CA 2009"
#
# Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
# Serial Number:00:c2:7e:43:04:4e:47:3f:19
# Subject: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Tue Jun 16 11:30:18 2009
# Not Valid After : Sun Dec 30 11:30:18 2029
# Fingerprint (SHA-256):
3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78
# Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

CKA_LABEL UTF8 "Microsec e-Szigno Root CA 2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END

CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END

CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\302\176\103\004\116\107\077\031
END

CKA_VALUE MULTILINE_OCTAL
\060\202\004\012\060\202\002\362\240\003\002\001\002\002\011\000
\302\176\103\004\116\107\077\031\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\201\202\061\013\060\011\006\003
\125\004\006\023\002\110\125\061\021\060\017\006\003\125\004\007
\014\010\102\165\144\141\160\145\163\164\061\026\060\024\006\003
\125\004\012\014\015\115\151\143\162\157\163\145\143\040\114\164
\144\056\061\047\060\045\006\003\125\004\003\014\036\115\151\143
\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040\122
\157\157\164\040\103\101\040\062\060\060\071\061\037\060\035\006
\011\052\206\110\206\367\015\001\011\001\026\020\151\156\146\157
\100\145\055\163\172\151\147\156\157\056\150\165\060\036\027\015
\060\071\060\066\061\066\061\061\063\060\061\070\132\027\015\062
\071\061\062\063\060\061\061\063\060\061\070\132\060\201\202\061
\013\060\011\006\003\125\004\006\023\002\110\125\061\021\060\017
\006\003\125\004\007\014\010\102\165\144\141\160\145\163\164\061
\026\060\024\006\003\125\004\012\014\015\115\151\143\162\157\163
\145\143\040\114\164\144\056\061\047\060\045\006\003\125\004\003
\014\036\115\151\143\162\157\163\145\143\040\145\055\123\172\151

\147\156\157\040\122\157\157\164\040\103\101\040\062\060\060\071
\061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026
\020\151\156\146\157\100\145\055\163\172\151\147\156\157\056\150
\165\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\351\370\217\363\143\255\332\206\330\247\340\102\373\317
\221\336\246\046\370\231\245\143\160\255\233\256\312\063\100\175
\155\226\156\241\016\104\356\341\023\235\224\102\122\232\275\165
\205\164\054\250\016\035\223\266\030\267\214\054\250\317\373\134
\161\271\332\354\376\350\176\217\344\057\035\262\250\165\207\330
\267\241\345\073\317\231\112\106\320\203\031\175\300\241\022\034
\225\155\112\364\330\307\245\115\063\056\205\071\100\165\176\024
\174\200\022\230\120\307\101\147\270\240\200\141\124\246\154\116
\037\340\235\016\007\351\311\272\063\347\376\300\125\050\054\002
\200\247\031\365\236\334\125\123\003\227\173\007\110\377\231\373
\067\212\044\304\131\314\120\020\143\216\252\251\032\260\204\032
\206\371\137\273\261\120\156\244\321\012\314\325\161\176\037\247
\033\174\365\123\156\042\137\313\053\346\324\174\135\256\326\302
\306\114\345\005\001\331\355\127\374\301\043\171\374\372\310\044
\203\225\363\265\152\121\001\320\167\326\351\022\241\371\032\203
\373\202\033\271\260\227\364\166\006\063\103\111\240\377\013\265
\372\265\002\003\001\000\001\243\201\200\060\176\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006
\003\125\035\016\004\026\004\024\313\017\306\337\102\103\314\075
\313\265\110\043\241\032\172\246\052\273\064\150\060\037\006\003
\125\035\043\004\030\060\026\200\024\313\017\306\337\102\103\314
\075\313\265\110\043\241\032\172\246\052\273\064\150\060\033\006
\003\125\035\021\004\024\060\022\201\020\151\156\146\157\100\145
\055\163\172\151\147\156\157\056\150\165\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\311\321
\016\136\056\325\314\263\174\076\313\374\075\377\015\050\225\223
\004\310\277\332\315\171\270\103\220\360\244\276\357\362\357\041
\230\274\324\324\135\006\366\356\102\354\060\154\240\252\251\312
\361\257\212\372\077\013\163\152\076\352\056\100\176\037\256\124
\141\171\353\056\010\067\327\043\363\214\237\276\035\261\341\244
\165\333\240\342\124\024\261\272\034\051\244\030\366\022\272\242
\024\024\343\061\065\310\100\377\267\340\005\166\127\301\034\131
\362\370\277\344\355\045\142\134\204\360\176\176\037\263\276\371
\267\041\021\314\003\001\126\160\247\020\222\036\033\064\201\036
\255\234\032\303\004\074\355\002\141\326\036\006\363\137\072\207
\362\053\361\105\207\345\075\254\321\307\127\204\275\153\256\334
\330\371\266\033\142\160\013\075\066\311\102\362\062\327\172\141
\346\322\333\075\317\310\251\311\233\334\333\130\104\327\157\070
\257\177\170\323\243\255\032\165\272\034\301\066\174\217\036\155
\034\303\165\106\256\065\005\246\366\134\075\041\356\126\360\311
\202\042\055\172\124\253\160\303\175\042\145\202\160\226

END

```
CKA_NSS_Mozilla_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "Microsec e-Szigno Root CA 2009"
# Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
# Serial Number:00:c2:7e:43:04:4e:47:3f:19
# Subject: E=info@e-szigno.hu,CN=Microsec
e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Tue Jun 16 11:30:18 2009
# Not Valid After : Sun Dec 30 11:30:18 2029
# Fingerprint (SHA-256):
3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78
# Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsec e-Szigno Root CA 2009"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\211\337\164\376\134\364\017\112\200\371\343\067\175\124\332\221
\341\001\061\216
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\111\364\003\274\104\055\203\276\110\151\175\051\144\374\261
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151
\143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006
\003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\302\176\103\004\116\107\077\031
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
```

```
# Certificate "GlobalSign Root CA - R3"
#
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
# Serial Number:04:00:00:00:00:01:21:58:53:08:a2
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
# Not Valid Before: Wed Mar 18 10:00:00 2009
# Not Valid After : Sun Mar 18 10:00:00 2029
# Fingerprint (SHA-256):
CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B
#
Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA - R3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\041\130\123\010\242
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\137\060\202\002\107\240\003\002\001\002\002\013\004
\000\000\000\000\001\041\130\123\010\242\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\060\114\061\040\060\036\006
\003\125\004\013\023\027\107\154\157\142\141\154\123\151\147\156
\040\122\157\157\164\040\103\101\040\055\040\122\063\061\023\060
\021\006\003\125\004\012\023\012\107\154\157\142\141\154\123\151
\147\156\061\023\060\021\006\003\125\004\003\023\012\107\154\157
\142\141\154\123\151\147\156\060\036\027\015\060\071\060\063\061
\070\061\060\060\060\060\060\132\027\015\062\071\060\063\061\070
\061\060\060\060\060\060\132\060\114\061\040\060\036\006\003\125
\004\013\023\027\107\154\157\142\141\154\123\151\147\156\040\122
```

\157\157\164\040\103\101\040\055\040\122\063\061\023\060\021\006
\003\125\004\012\023\012\107\154\157\142\141\154\123\151\147\156
\061\023\060\021\006\003\125\004\003\023\012\107\154\157\142\141
\154\123\151\147\156\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\314\045\166\220\171\006\170\042\026\365
\300\203\266\204\312\050\236\375\005\166\021\305\255\210\162\374
\106\002\103\307\262\212\235\004\137\044\313\056\113\341\140\202
\106\341\122\253\014\201\107\160\154\335\144\321\353\365\054\243
\017\202\075\014\053\256\227\327\266\024\206\020\171\273\073\023
\200\167\214\010\341\111\322\152\142\057\037\136\372\226\150\337
\211\047\225\070\237\006\327\076\311\313\046\131\015\163\336\260
\310\351\046\016\203\025\306\357\133\213\322\004\140\312\111\246
\050\366\151\073\366\313\310\050\221\345\235\212\141\127\067\254
\164\024\334\164\340\072\356\162\057\056\234\373\320\273\277\365
\075\000\341\006\063\350\202\053\256\123\246\072\026\163\214\335
\101\016\040\072\300\264\247\241\351\262\117\220\056\062\140\351
\127\313\271\004\222\150\150\345\070\046\140\165\262\237\167\377
\221\024\357\256\040\111\374\255\100\025\110\321\002\061\141\031
\136\270\227\357\255\167\267\144\232\172\277\137\301\023\357\233
\142\373\015\154\340\124\151\026\251\003\332\156\351\203\223\161
\166\306\151\205\202\027\002\003\001\000\001\243\102\060\100\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\217\360\113\177\250
\056\105\044\256\115\120\372\143\232\213\336\342\335\033\274\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202
\001\001\000\113\100\333\300\120\252\376\310\014\357\367\226\124
\105\111\273\226\000\011\101\254\263\023\206\206\050\007\063\312
\153\346\164\271\272\000\055\256\244\012\323\365\361\361\017\212
\277\163\147\112\203\307\104\173\170\340\257\156\154\157\003\051
\216\063\071\105\303\216\344\271\127\154\252\374\022\226\354\123
\306\055\344\044\154\271\224\143\373\334\123\150\147\126\076\203
\270\317\065\041\303\311\150\376\316\332\302\123\252\314\220\212
\351\360\135\106\214\225\335\172\130\050\032\057\035\336\315\000
\067\101\217\355\104\155\327\123\050\227\176\363\147\004\036\025
\327\212\226\264\323\336\114\047\244\114\033\163\163\166\364\027
\231\302\037\172\016\343\055\010\255\012\034\054\377\074\253\125
\016\017\221\176\066\353\303\127\111\276\341\056\055\174\140\213
\303\101\121\023\043\235\316\367\062\153\224\001\250\231\347\054
\063\037\072\073\045\322\206\100\316\073\054\206\170\311\141\057
\024\272\356\333\125\157\337\204\356\005\011\115\275\050\330\162
\316\323\142\120\145\036\353\222\227\203\061\331\263\265\312\107
\130\077\137

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GlobalSign Root CA - R3"

Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3

Serial Number:04:00:00:00:01:21:58:53:08:a2

#

Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3

Not Valid Before: Wed Mar 18 10:00:00 2009

Not Valid After : Sun Mar 18 10:00:00 2029

Fingerprint (SHA-256):

CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B

Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Root CA - R3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\326\233\126\021\110\360\034\167\305\105\170\301\011\046\337\133

\205\151\166\255

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\305\337\270\111\312\005\023\125\356\055\272\032\303\076\260\050

END

CKA_ISSUER MULTILINE_OCTAL

\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157

\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040

\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107

\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125

\004\003\023\012\107\154\157\142\141\154\123\151\147\156

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\013\004\000\000\000\000\001\041\130\123\010\242

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"

#

Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

Serial Number:53:ec:3b:ee:fb:b2:48:5f

Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

Not Valid Before: Wed May 20 08:38:15 2009

Not Valid After : Tue Dec 31 08:38:15 2030

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# Fingerprint (SHA-256):
04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF
# Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\123\354\073\356\373\262\110\137
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\024\060\202\003\374\240\003\002\001\002\002\010\123
\354\073\356\373\262\110\137\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\121\061\013\060\011\006\003\125\004
\006\023\002\105\123\061\102\060\100\006\003\125\004\003\014\071
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\156\040\106\151\162\155\141
\160\162\157\146\145\163\151\157\156\141\154\040\103\111\106\040
\101\066\062\066\063\064\060\066\070\060\036\027\015\060\071\060
\065\062\060\060\070\063\070\061\065\132\027\015\063\060\061\062
\063\061\060\070\063\070\061\065\132\060\121\061\013\060\011\006
\003\125\004\006\023\002\105\123\061\102\060\100\006\003\125\004
\003\014\071\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\040\106\151
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\040\103
\111\106\040\101\066\062\066\063\064\060\066\070\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
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\202\002\017\000\060\202\002\012\002\202\002\001\000\312\226\153
\216\352\370\373\361\242\065\340\177\114\332\340\303\122\327\175
\266\020\310\002\136\263\103\052\304\117\152\262\312\034\135\050
\232\170\021\032\151\131\127\257\265\040\102\344\213\017\346\337
\133\246\003\222\057\365\021\344\142\327\062\161\070\331\004\014
\161\253\075\121\176\017\007\337\143\005\134\351\277\224\157\301
\051\202\300\264\332\121\260\301\074\273\255\067\112\134\312\361
\113\066\016\044\253\277\303\204\167\375\250\120\364\261\347\306
\057\322\055\131\215\172\012\116\226\151\122\002\252\066\230\354
\374\372\024\203\014\067\037\311\222\067\177\327\201\055\345\304
\271\340\076\064\376\147\364\076\146\321\323\364\100\317\136\142
\064\017\160\006\076\040\030\132\316\367\162\033\045\154\223\164
\024\223\243\163\261\016\252\207\020\043\131\137\040\005\031\107
\355\150\216\222\022\312\135\374\326\053\262\222\074\040\317\341
\137\257\040\276\240\166\177\166\345\354\032\206\141\063\076\347
\173\264\077\240\017\216\242\271\152\157\271\207\046\157\101\154
\210\246\120\375\152\143\013\365\223\026\033\031\217\262\355\233
\233\311\220\365\001\014\337\031\075\017\076\070\043\311\057\217
\014\321\002\376\033\125\326\116\320\215\074\257\117\244\363\376
\257\052\323\005\235\171\010\241\313\127\061\264\234\310\220\262
\147\364\030\026\223\072\374\107\330\321\170\226\061\037\272\053
\014\137\135\231\255\143\211\132\044\040\166\330\337\375\253\116
\246\042\252\235\136\346\047\212\175\150\051\243\347\212\270\332
\021\273\027\055\231\235\023\044\106\367\305\342\330\237\216\177
\307\217\164\155\132\262\350\162\365\254\356\044\020\255\057\024
\332\377\055\232\106\161\107\276\102\337\273\001\333\364\177\323
\050\217\061\131\133\323\311\002\246\264\122\312\156\227\373\103
\305\010\046\157\212\364\273\375\237\050\252\015\325\105\363\023
\072\035\330\300\170\217\101\147\074\036\224\144\256\173\013\305
\350\331\001\210\071\032\227\206\144\101\325\073\207\014\156\372
\017\306\275\110\024\277\071\115\324\236\101\266\217\226\035\143
\226\223\331\225\006\170\061\150\236\067\006\073\200\211\105\141
\071\043\307\033\104\243\025\345\034\370\222\060\273\002\003\001
\000\001\243\201\357\060\201\354\060\022\006\003\125\035\023\001
\001\377\004\010\060\006\001\001\377\002\001\001\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003
\125\035\016\004\026\004\024\145\315\353\253\065\036\000\076\176
\325\164\300\034\264\163\107\016\032\144\057\060\201\246\006\003
\125\035\040\004\201\236\060\201\233\060\201\230\006\004\125\035
\040\000\060\201\217\060\057\006\010\053\006\001\005\005\007\002
\001\026\043\150\164\164\160\072\057\057\167\167\167\056\146\151
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143
\157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007
\002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157
\000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102
\000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040
\000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145
\000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060

\000\061\000\067\060\015\006\011\052\206\110\206\367\015\001\001
\005\005\000\003\202\002\001\000\027\175\240\371\264\335\305\305
\353\255\113\044\265\241\002\253\335\245\210\112\262\017\125\113
\053\127\214\073\345\061\335\376\304\062\361\347\133\144\226\066
\062\030\354\245\062\167\327\343\104\266\300\021\052\200\271\075
\152\156\174\233\323\255\374\303\326\243\346\144\051\174\321\341
\070\036\202\053\377\047\145\257\373\026\025\304\056\161\204\345
\265\377\372\244\107\275\144\062\273\366\045\204\242\047\102\365
\040\260\302\023\020\021\315\020\025\272\102\220\052\322\104\341
\226\046\353\061\110\022\375\052\332\311\006\317\164\036\251\113
\325\207\050\371\171\064\222\076\056\104\350\366\217\117\217\065
\077\045\263\071\334\143\052\220\153\040\137\304\122\022\116\227
\054\052\254\235\227\336\110\362\243\146\333\302\322\203\225\246
\146\247\236\045\017\351\013\063\221\145\012\132\303\331\124\022
\335\257\303\116\016\037\046\136\015\334\263\215\354\325\201\160
\336\322\117\044\005\363\154\116\365\114\111\146\215\321\377\322
\013\045\101\110\376\121\204\306\102\257\200\004\317\320\176\144
\111\344\362\337\242\354\261\114\300\052\035\347\264\261\145\242
\304\274\361\230\364\252\160\007\143\264\270\332\073\114\372\100
\042\060\133\021\246\360\005\016\306\002\003\110\253\206\233\205
\335\333\335\352\242\166\200\163\175\365\234\004\304\105\215\347
\271\034\213\236\352\327\165\321\162\261\336\165\104\347\102\175
\342\127\153\175\334\231\274\075\203\050\352\200\223\215\305\114
\145\301\160\201\270\070\374\103\061\262\366\003\064\107\262\254
\373\042\006\313\036\335\027\107\034\137\146\271\323\032\242\332
\021\261\244\274\043\311\344\276\207\377\271\224\266\370\135\040
\112\324\137\347\275\150\173\145\362\025\036\322\072\251\055\351
\330\153\044\254\227\130\104\107\255\131\030\361\041\145\160\336
\316\064\140\250\100\361\363\074\244\303\050\043\214\376\047\063
\103\100\240\027\074\353\352\073\260\162\246\243\271\112\113\136
\026\110\364\262\274\310\214\222\305\235\237\254\162\066\274\064
\200\064\153\251\213\222\300\270\027\355\354\166\123\365\044\001
\214\263\042\350\113\174\125\306\235\372\243\024\273\145\205\156
\156\117\022\176\012\074\235\225

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Autoridad de Certificacion Firmaprofesional CIF A62634068"

Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

Serial Number:53:ec:3b:ee:fb:b2:48:5f

Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

Not Valid Before: Wed May 20 08:38:15 2009

Not Valid After : Tue Dec 31 08:38:15 2030

Fingerprint (SHA-256):

04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF

```
#
Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\256\305\373\077\310\341\277\304\345\117\003\007\132\232\350\000
\267\367\266\372
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\163\072\164\172\354\273\243\226\246\302\344\342\310\233\300\303
END
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\123\354\073\356\373\262\110\137
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "Izenpe.com"
#
# Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES
# Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d
# Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES
# Not Valid Before: Thu Dec 13 13:08:28 2007
# Not Valid After : Sun Dec 13 08:27:25 2037
# Fingerprint (SHA-256):
25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F
# Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Izenpe.com"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

CKA_SUBJECT MULTILINE_OCTAL

\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\000\260\267\132\026\110\137\277\341\313\365\213\327\031
\346\175

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\361\060\202\003\331\240\003\002\001\002\002\020\000
\260\267\132\026\110\137\277\341\313\365\213\327\031\346\175\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\070
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\024\060
\022\006\003\125\004\012\014\013\111\132\105\116\120\105\040\123
\056\101\056\061\023\060\021\006\003\125\004\003\014\012\111\172
\145\156\160\145\056\143\157\155\060\036\027\015\060\067\061\062
\061\063\061\063\060\070\062\070\132\027\015\063\067\061\062\061
\063\060\070\062\067\062\065\132\060\070\061\013\060\011\006\003
\125\004\006\023\002\105\123\061\024\060\022\006\003\125\004\012
\014\013\111\132\105\116\120\105\040\123\056\101\056\061\023\060
\021\006\003\125\004\003\014\012\111\172\145\156\160\145\056\143
\157\155\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\311\323\172\312\017\036\254\247\206\350\026\145\152
\261\302\033\105\062\161\225\331\376\020\133\314\257\347\245\171
\001\217\211\303\312\362\125\161\367\167\276\167\224\363\162\244
\054\104\330\236\222\233\024\072\241\347\044\220\012\012\126\216
\305\330\046\224\341\331\110\341\055\076\332\012\162\335\243\231
\025\332\201\242\207\364\173\156\046\167\211\130\255\326\353\014
\262\101\172\163\156\155\333\172\170\101\351\010\210\022\176\207
\056\146\021\143\154\124\373\074\235\162\300\274\056\377\302\267
\335\015\166\343\072\327\367\264\150\276\242\365\343\201\156\301
\106\157\135\215\340\115\306\124\125\211\032\063\061\012\261\127
\271\243\212\230\303\354\073\064\305\225\101\151\176\165\302\074
\040\305\141\272\121\107\240\040\220\223\241\220\113\363\116\174
\205\105\124\232\321\005\046\101\260\265\115\035\063\276\304\003
\310\045\174\301\160\333\073\364\011\055\124\047\110\254\057\341
\304\254\076\310\313\222\114\123\071\067\043\354\323\001\371\340

\011\104\115\115\144\300\341\015\132\207\042\274\255\033\243\376
\046\265\025\363\247\374\204\031\351\354\241\210\264\104\151\204
\203\363\211\321\164\006\251\314\013\326\302\336\047\205\120\046
\312\027\270\311\172\207\126\054\032\001\036\154\276\023\255\020
\254\265\044\365\070\221\241\326\113\332\361\273\322\336\107\265
\361\274\201\366\131\153\317\031\123\351\215\025\313\112\313\251
\157\104\345\033\101\317\341\206\247\312\320\152\237\274\114\215
\006\063\132\242\205\345\220\065\240\142\134\026\116\360\343\242
\372\003\032\264\054\161\263\130\054\336\173\013\333\032\017\353
\336\041\037\006\167\006\003\260\311\357\231\374\300\271\117\013
\206\050\376\322\271\352\343\332\245\303\107\151\022\340\333\360
\366\031\213\355\173\160\327\002\326\355\207\030\050\054\004\044
\114\167\344\110\212\032\306\073\232\324\017\312\372\165\322\001
\100\132\215\171\277\213\317\113\317\252\026\301\225\344\255\114
\212\076\027\221\324\261\142\345\202\345\200\004\244\003\176\215
\277\332\177\242\017\227\117\014\323\015\373\327\321\345\162\176
\034\310\167\377\133\232\017\267\256\005\106\345\361\250\026\354
\107\244\027\002\003\001\000\001\243\201\366\060\201\363\060\201
\260\006\003\125\035\021\004\201\250\060\201\245\201\017\151\156
\146\157\100\151\172\145\156\160\145\056\143\157\155\244\201\221
\060\201\216\061\107\060\105\006\003\125\004\012\014\076\111\132
\105\116\120\105\040\123\056\101\056\040\055\040\103\111\106\040
\101\060\061\063\063\067\062\066\060\055\122\115\145\162\143\056
\126\151\164\157\162\151\141\055\107\141\163\164\145\151\172\040
\124\061\060\065\065\040\106\066\062\040\123\070\061\103\060\101
\006\003\125\004\011\014\072\101\166\144\141\040\144\145\154\040
\115\145\144\151\164\145\162\162\141\156\145\157\040\105\164\157
\162\142\151\144\145\141\040\061\064\040\055\040\060\061\060\061
\060\040\126\151\164\157\162\151\141\055\107\141\163\164\145\151
\172\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\035\006\003\125\035\016\004\026\004\024\035\034\145
\016\250\362\045\173\264\221\317\344\261\261\346\275\125\164\154
\005\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\003\202\002\001\000\170\246\014\026\112\237\114\210\072\300\313
\016\245\026\175\237\271\110\137\030\217\015\142\066\366\315\031
\153\254\253\325\366\221\175\256\161\363\077\263\016\170\205\233
\225\244\047\041\107\102\112\174\110\072\365\105\174\263\014\216
\121\170\254\225\023\336\306\375\175\270\032\220\114\253\222\003
\307\355\102\001\316\017\330\261\372\242\222\341\140\155\256\172
\153\011\252\306\051\356\150\111\147\060\200\044\172\061\026\071
\133\176\361\034\056\335\154\011\255\362\061\301\202\116\271\273
\371\276\277\052\205\077\300\100\243\072\131\374\131\113\074\050
\044\333\264\025\165\256\015\210\272\056\163\300\275\130\207\345
\102\362\353\136\356\036\060\042\231\313\067\321\304\041\154\201
\354\276\155\046\346\034\344\102\040\236\107\260\254\203\131\160
\054\065\326\257\066\064\264\315\073\370\062\250\357\343\170\211
\373\215\105\054\332\234\270\176\100\034\141\347\076\242\222\054

\113\362\315\372\230\266\051\377\363\362\173\251\037\056\240\223
\127\053\336\205\003\371\151\067\313\236\170\152\005\264\305\061
\170\211\354\172\247\205\341\271\173\074\336\276\036\171\204\316
\237\160\016\131\302\065\056\220\052\061\331\344\105\172\101\244
\056\023\233\064\016\146\173\111\253\144\227\320\106\303\171\235
\162\120\143\246\230\133\006\275\110\155\330\071\203\160\350\065
\360\005\321\252\274\343\333\310\002\352\174\375\202\332\302\133
\122\065\256\230\072\255\272\065\223\043\247\037\110\335\065\106
\230\262\020\150\344\245\061\302\012\130\056\031\201\020\311\120
\165\374\352\132\026\316\021\327\356\357\120\210\055\141\377\077
\102\163\005\224\103\325\216\074\116\001\072\031\245\037\106\116
\167\320\135\345\201\042\041\207\376\224\175\204\330\223\255\326
\150\103\110\262\333\353\163\044\347\221\177\124\244\266\200\076
\235\243\074\114\162\302\127\304\240\324\314\070\047\316\325\006
\236\242\110\331\351\237\316\202\160\066\223\232\073\337\226\041
\343\131\267\014\332\221\067\360\375\131\132\263\231\310\151\154
\103\046\001\065\143\140\125\211\003\072\165\330\272\112\331\124
\377\356\336\200\330\055\321\070\325\136\055\013\230\175\076\154
\333\374\046\210\307

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Izenpe.com"

#

Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES

Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d

Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES

Not Valid Before: Thu Dec 13 13:08:28 2007

Not Valid After : Sun Dec 13 08:27:25 2037

Fingerprint (SHA-256):

25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F

Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Izenpe.com"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\057\170\075\045\122\030\247\112\145\071\161\265\054\242\234\105
\025\157\351\031

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\246\260\315\205\200\332\134\120\064\243\071\220\057\125\147\163

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\024\060\022\006\003\125\004\012\014\013\111\132\105\116\120\105
\040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012
\111\172\145\156\160\145\056\143\157\155
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\000\260\267\132\026\110\137\277\341\313\365\213\327\031
\346\175
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Chambers of Commerce Root - 2008"

#

Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU

Serial Number:00:a3:da:42:7e:a4:b1:ae:da

Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU

Not Valid Before: Fri Aug 01 12:29:50 2008

Not Valid After : Sat Jul 31 12:29:50 2038

Fingerprint (SHA-256):

06:3E:4A:FA:C4:91:DF:D3:32:F3:08:9B:85:42:E9:46:17:D8:93:D7:FE:94:4E:10:A7:93:7E:E2:9D:96:93:C0

#

Fingerprint (SHA1): 78:6A:74:AC:76:AB:14:7F:9C:6A:30:50:BA:9E:A8:7E:FE:9A:CE:3C

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Chambers of Commerce Root - 2008"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
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\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155
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END

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CKA_ISSUER MULTILINE_OCTAL

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CKA_SERIAL_NUMBER MULTILINE_OCTAL

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CKA_VALUE MULTILINE_OCTAL

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\122\124\135\045\007\312\026\040\270\255\344\101\356\172\010\376
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CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Trust for "Chambers of Commerce Root - 2008"
# Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU
# Serial Number:00:a3:da:42:7e:a4:b1:ae:da
#
Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU
# Not Valid Before: Fri Aug 01 12:29:50 2008
# Not Valid After : Sat Jul 31 12:29:50 2038
# Fingerprint (SHA-256):
06:3E:4A:FA:C4:91:DF:D3:32:F3:08:9B:85:42:E9:46:17:D8:93:D7:FE:94:4E:10:A7:93:7E:E2:9D:96:93:C0
# Fingerprint (SHA1): 78:6A:74:AC:76:AB:14:7F:9C:6A:30:50:BA:9E:A8:7E:FE:9A:CE:3C
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Chambers of Commerce Root - 2008"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\170\152\164\254\166\253\024\177\234\152\060\120\272\236\250\176
\376\232\316\074
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CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```

#
# Certificate "Global Chambersign Root - 2008"
#
# Issuer: CN=Global Chambersign
Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at
www.camerfirma.com/address),C=EU
# Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce
# Subject: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU
# Not Valid Before: Fri Aug 01 12:31:40 2008
# Not Valid After : Sat Jul 31 12:31:40 2038
# Fingerprint (SHA-256):
13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA
# Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Global Chambersign Root - 2008"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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CKA_VALUE MULTILINE_OCTAL

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\145\162\146\151\162\155\141\040\123\056\101\056\061\047\060\045
\006\003\125\004\003\023\036\107\154\157\142\141\154\040\103\150
\141\155\142\145\162\163\151\147\156\040\122\157\157\164\040\055
\040\062\060\060\070\060\202\002\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002
\012\002\202\002\001\000\300\337\126\323\344\072\233\166\105\264
\023\333\377\301\266\031\213\067\101\030\225\122\107\353\027\235
\051\210\216\065\154\006\062\056\107\142\363\111\004\277\175\104
\066\261\161\314\275\132\011\163\325\331\205\104\377\221\127\045
\337\136\066\216\160\321\134\161\103\035\331\332\357\134\322\373
\033\275\072\265\313\255\243\314\104\247\015\256\041\025\077\271
\172\133\222\165\330\244\022\070\211\031\212\267\200\322\342\062
\157\126\234\221\326\210\020\013\263\164\144\222\164\140\363\366
\317\030\117\140\262\043\320\307\073\316\141\113\231\217\302\014
\320\100\262\230\334\015\250\116\243\271\012\256\140\240\255\105
\122\143\272\146\275\150\340\371\276\032\250\201\273\036\101\170
\165\323\301\376\000\125\260\207\124\350\047\220\065\035\114\063
\255\227\374\227\056\230\204\277\054\311\243\277\321\230\021\024
\355\143\370\312\230\210\130\027\231\355\105\003\227\176\074\206
\036\210\214\276\362\221\204\217\145\064\330\000\114\175\267\061

\027\132\051\172\012\030\044\060\243\067\265\172\251\001\175\046
\326\371\016\216\131\361\375\033\063\265\051\073\027\073\101\266
\041\335\324\300\075\245\237\237\037\103\120\311\273\274\154\172
\227\230\356\315\214\037\373\234\121\256\213\160\275\047\237\161
\300\153\254\175\220\146\350\327\135\072\015\260\325\302\215\325
\310\235\235\301\155\320\320\277\121\344\343\370\303\070\066\256
\326\247\165\346\257\204\103\135\223\222\014\152\007\336\073\035
\230\042\326\254\301\065\333\243\240\045\377\162\265\166\035\336
\155\351\054\146\054\122\204\320\105\222\316\034\345\345\063\035
\334\007\123\124\243\252\202\073\232\067\057\334\335\240\144\351
\346\335\275\256\374\144\205\035\074\247\311\006\336\204\377\153
\350\153\032\074\305\242\263\102\373\213\011\076\137\010\122\307
\142\304\324\005\161\277\304\144\344\370\241\203\350\076\022\233
\250\036\324\066\115\057\161\366\215\050\366\203\251\023\322\141
\301\221\273\110\300\064\217\101\214\113\114\333\151\022\377\120
\224\234\040\203\131\163\355\174\241\362\361\375\335\367\111\323
\103\130\240\126\143\312\075\075\345\065\126\131\351\016\312\040
\314\053\113\223\051\017\002\003\001\000\001\243\202\001\152\060
\202\001\146\060\022\006\003\125\035\023\001\001\377\004\010\060
\006\001\001\377\002\001\014\060\035\006\003\125\035\016\004\026
\004\024\271\011\312\234\036\333\323\154\072\153\256\355\124\361
\133\223\006\065\056\136\060\201\341\006\003\125\035\043\004\201
\331\060\201\326\200\024\271\011\312\234\036\333\323\154\072\153
\256\355\124\361\133\223\006\065\056\136\241\201\262\244\201\257
\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070\202
\011\000\311\315\323\351\325\175\043\316\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\075\006\003\125\035
\040\004\066\060\064\060\062\006\004\125\035\040\000\060\052\060
\050\006\010\053\006\001\005\005\007\002\001\026\034\150\164\164
\160\072\057\057\160\157\154\151\143\171\056\143\141\155\145\162
\146\151\162\155\141\056\143\157\155\060\015\006\011\052\206\110
\206\367\015\001\001\005\005\000\003\202\002\001\000\200\210\177
\160\336\222\050\331\005\224\106\377\220\127\251\361\057\337\032
\015\153\372\174\016\034\111\044\171\047\330\106\252\157\051\131
\122\210\160\022\352\335\075\365\233\123\124\157\341\140\242\250
\011\271\354\353\131\174\306\065\361\334\030\351\361\147\345\257
\272\105\340\011\336\312\104\017\302\027\016\167\221\105\172\063
\137\137\226\054\150\213\301\107\217\230\233\075\300\354\313\365

\325\202\222\204\065\321\276\066\070\126\162\061\133\107\055\252
\027\244\143\121\353\012\001\255\177\354\165\236\313\241\037\361
\177\022\261\271\344\144\177\147\326\043\052\364\270\071\135\230
\350\041\247\341\275\075\102\032\164\232\160\257\150\154\120\135
\111\317\377\373\016\135\346\054\107\327\201\072\131\000\265\163
\153\143\040\366\061\105\010\071\016\364\160\176\100\160\132\077
\320\153\102\251\164\075\050\057\002\155\165\162\225\011\215\110
\143\306\306\043\127\222\223\136\065\301\215\371\012\367\054\235
\142\034\366\255\174\335\246\061\036\266\261\307\176\205\046\372
\244\152\265\332\143\060\321\357\223\067\262\146\057\175\005\367
\347\267\113\230\224\065\300\331\072\051\301\235\262\120\063\035
\112\251\132\246\311\003\357\355\364\347\250\156\212\264\127\204
\353\244\077\320\356\252\252\207\133\143\350\223\342\153\250\324
\270\162\170\153\033\355\071\344\135\313\233\252\207\325\117\116
\000\376\331\152\237\074\061\017\050\002\001\175\230\350\247\260
\242\144\236\171\370\110\362\025\251\314\346\310\104\353\077\170
\231\362\173\161\076\074\361\230\247\305\030\022\077\346\273\050
\063\102\351\105\012\174\155\362\206\171\057\305\202\031\175\011
\211\174\262\124\166\210\256\336\301\363\314\341\156\333\061\326
\223\256\231\240\357\045\152\163\230\211\133\072\056\023\210\036
\277\300\222\224\064\033\343\047\267\213\036\157\102\377\347\351
\067\233\120\035\055\242\371\002\356\313\130\130\072\161\274\150
\343\252\301\257\034\050\037\242\334\043\145\077\201\352\256\231
\323\330\060\317\023\015\117\025\311\204\274\247\110\055\370\060
\043\167\330\106\113\171\155\366\214\355\072\177\140\021\170\364
\351\233\256\325\124\300\164\200\321\013\102\237\301

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Global Chambersign Root - 2008"

Issuer: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at www.camerfirma.com/address),C=EU

Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce

Subject: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at www.camerfirma.com/address),C=EU

Not Valid Before: Fri Aug 01 12:31:40 2008

Not Valid After : Sat Jul 31 12:31:40 2038

Fingerprint (SHA-256):

13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA

Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL

```

CK_FALSE
CKA_LABEL UTF8 "Global Chambersign Root - 2008"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\112\275\356\354\225\015\065\234\211\256\307\122\241\054\133\051
\366\326\252\014
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\236\200\377\170\001\014\056\301\066\275\376\226\220\156\010\363
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\311\315\323\351\325\175\043\316
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Go Daddy Root Certificate Authority - G2"
#
# Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
# Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After : Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
45:14:0B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA
# Fingerprint (SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```



```
CKA_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062
END
```

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\305\060\202\002\255\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164
\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012\023
\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111\156
\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157\040
\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062\060\036\027\015\060\071\060\071\060\061\060
\060\060\060\060\060\132\027\015\063\067\061\062\063\061\062\063
\065\071\065\071\132\060\201\203\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\020\060\016\006\003\125\004\010\023\007
\101\162\151\172\157\156\141\061\023\060\021\006\003\125\004\007
\023\012\123\143\157\164\164\163\144\141\154\145\061\032\060\030
\006\003\125\004\012\023\021\107\157\104\141\144\144\171\056\143
\157\155\054\040\111\156\143\056\061\061\060\057\006\003\125\004
```

\003\023\050\107\157\040\104\141\144\144\171\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\277\161\142\010
\361\372\131\064\367\033\311\030\243\367\200\111\130\351\042\203
\023\246\305\040\103\001\073\204\361\346\205\111\237\047\352\366
\204\033\116\240\264\333\160\230\307\062\001\261\005\076\007\116
\356\364\372\117\057\131\060\042\347\253\031\126\153\342\200\007
\374\363\026\165\200\071\121\173\345\371\065\266\164\116\251\215
\202\023\344\266\077\251\003\203\372\242\276\212\025\152\177\336
\013\303\266\031\024\005\312\352\303\250\004\224\073\106\174\062
\015\363\000\146\042\310\215\151\155\066\214\021\030\267\323\262
\034\140\264\070\372\002\214\316\323\335\106\007\336\012\076\353
\135\174\310\174\373\260\053\123\244\222\142\151\121\045\005\141
\032\104\201\214\054\251\103\226\043\337\254\072\201\232\016\051
\305\034\251\351\135\036\266\236\236\060\012\071\316\361\210\200
\373\113\135\314\062\354\205\142\103\045\064\002\126\047\001\221
\264\073\160\052\077\156\261\350\234\210\001\175\237\324\371\333
\123\155\140\235\277\054\347\130\253\270\137\106\374\316\304\033
\003\074\011\353\111\061\134\151\106\263\340\107\002\003\001\000
\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004
\024\072\232\205\007\020\147\050\266\357\366\275\005\101\156\040
\301\224\332\017\336\060\015\006\011\052\206\110\206\367\015\001
\001\013\005\000\003\202\001\001\000\231\333\135\171\325\371\227
\131\147\003\141\361\176\073\006\061\165\055\241\040\216\117\145
\207\264\367\246\234\274\330\351\057\320\333\132\356\317\164\214
\163\264\070\102\332\005\173\370\002\165\270\375\245\261\327\256
\366\327\336\023\313\123\020\176\212\106\321\227\372\267\056\053
\021\253\220\260\047\200\371\350\237\132\351\067\237\253\344\337
\154\263\205\027\235\075\331\044\117\171\221\065\326\137\004\353
\200\203\253\232\002\055\265\020\364\330\220\307\004\163\100\355
\162\045\240\251\237\354\236\253\150\022\231\127\306\217\022\072
\011\244\275\104\375\006\025\067\301\233\344\062\243\355\070\350
\330\144\363\054\176\024\374\002\352\237\315\377\007\150\027\333
\042\220\070\055\172\215\321\124\361\151\343\137\063\312\172\075
\173\012\343\312\177\137\071\345\342\165\272\305\166\030\063\316
\054\360\057\114\255\367\261\347\316\117\250\304\233\112\124\006
\305\177\175\325\010\017\342\034\376\176\027\270\254\136\366\324
\026\262\103\011\014\115\366\247\153\264\231\204\145\312\172\210
\342\342\104\276\134\367\352\034\365

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Trust for "Go Daddy Root Certificate Authority - G2"
# Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
# Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After : Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
45:14:0B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA
# Fingerprint
(SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\107\276\253\311\042\352\350\016\170\170\064\142\247\237\105\302
\124\375\346\213
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\200\072\274\042\301\346\373\215\233\073\047\112\062\033\232\001
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Starfield Root Certificate Authority - G2"
#
# Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
```

```
Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
# Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After : Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5
# Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Root Certificate Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\335\060\202\002\305\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
```

\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062\060
\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145\154
\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062\060\036\027\015\060\071\060\071\060\061\060\060\060\060\060
\060\132\027\015\063\067\061\062\063\061\062\063\065\071\065\071
\132\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172
\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143
\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061
\062\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151
\145\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055
\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\275\355\301\003\374\366\217\374\002\261\157\133
\237\110\331\235\171\342\242\267\003\141\126\030\303\107\266\327
\312\075\065\056\211\103\367\241\151\233\336\212\032\375\023\040
\234\264\111\167\062\051\126\375\271\354\214\335\042\372\162\334
\047\141\227\356\366\132\204\354\156\031\271\211\054\334\204\133
\325\164\373\153\137\305\211\245\020\122\211\106\125\364\270\165
\034\346\177\344\124\256\113\370\125\162\127\002\031\370\027\161
\131\353\036\050\007\164\305\235\110\276\154\264\364\244\260\363
\144\067\171\222\300\354\106\136\177\341\155\123\114\142\257\315
\037\013\143\273\072\235\373\374\171\000\230\141\164\317\046\202
\100\143\363\262\162\152\031\015\231\312\324\016\165\314\067\373
\213\211\301\131\361\142\177\137\263\137\145\060\370\247\267\115
\166\132\036\166\136\064\300\350\226\126\231\212\263\360\177\244
\315\275\334\062\061\174\221\317\340\137\021\370\153\252\111\134
\321\231\224\321\242\343\143\133\011\166\265\126\142\341\113\164
\035\226\324\046\324\010\004\131\320\230\016\016\346\336\374\303
\354\037\220\361\002\003\001\000\001\243\102\060\100\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035
\006\003\125\035\016\004\026\004\024\174\014\062\037\247\331\060
\177\304\175\150\243\142\250\241\316\253\007\133\047\060\015\006
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001
\000\021\131\372\045\117\003\157\224\231\073\232\037\202\205\071
\324\166\005\224\136\341\050\223\155\142\135\011\302\240\250\324
\260\165\070\361\064\152\235\344\237\212\206\046\121\346\054\321
\306\055\156\225\040\112\222\001\354\270\212\147\173\061\342\147

```
\056\214\225\003\046\056\103\235\112\061\366\016\265\014\273\267
\342\067\177\042\272\000\243\016\173\122\373\153\273\073\304\323
\171\121\116\315\220\364\147\007\031\310\074\106\172\015\001\175
\305\130\347\155\346\205\060\027\232\044\304\020\340\004\367\340
\362\177\324\252\012\377\102\035\067\355\224\345\144\131\022\040
\167\070\323\062\076\070\201\165\226\163\372\150\217\261\313\316
\037\305\354\372\234\176\317\176\261\361\007\055\266\374\277\312
\244\277\320\227\005\112\274\352\030\050\002\220\275\124\170\011
\041\161\323\321\175\035\331\026\260\251\141\075\320\012\000\042
\374\307\173\313\011\144\105\013\073\100\201\367\175\174\062\365
\230\312\130\216\175\052\356\220\131\163\144\371\066\164\136\045
\241\365\146\005\056\177\071\025\251\052\373\120\213\216\205\151
\364
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Starfield Root Certificate Authority - G2"

Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US

Serial Number: 0 (0x0)

Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US

#

Not Valid Before: Tue Sep 01 00:00:00 2009

Not Valid After : Thu Dec 31 23:59:59 2037

Fingerprint (SHA-256):

2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5

Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Starfield Root Certificate Authority - G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\265\034\006\174\356\053\014\075\370\125\253\055\222\364\376\071
\324\347\017\016
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\326\071\201\306\122\176\226\151\374\374\312\146\355\005\362\226
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
```

```
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\001\000
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Starfield Services Root Certificate Authority - G2"

#

Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US

Serial Number: 0 (0x0)

Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US

Not Valid Before:

Tue Sep 01 00:00:00 2009

Not Valid After : Thu Dec 31 23:59:59 2037

Fingerprint (SHA-256):

56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5

Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Starfield Services Root Certificate Authority - G2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\357\060\202\002\327\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073\060
\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145\154
\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164\040
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150
\157\162\151\164\171\040\055\040\107\062\060\036\027\015\060\071
\060\071\060\061\060\060\060\060\060\060\132\027\015\063\067\061
\062\063\061\062\063\065\071\065\071\132\060\201\230\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\020\060\016\006\003
\125\004\010\023\007\101\162\151\172\157\156\141\061\023\060\021
\006\003\125\004\007\023\012\123\143\157\164\164\163\144\141\154
\145\061\045\060\043\006\003\125\004\012\023\034\123\164\141\162
\146\151\145\154\144\040\124\145\143\150\156\157\154\157\147\151
\145\163\054\040\111\156\143\056\061\073\060\071\006\003\125\004
\003\023\062\123\164\141\162\146\151\145\154\144\040\123\145\162
\166\151\143\145\163\040\122\157\157\164\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\325\014\072\304\052\371\116\342\365\276
\031\227\137\216\210\123\261\037\077\313\317\237\040\023\155\051
\072\310\017\175\074\367\153\166\070\143\331\066\140\250\233\136
\134\000\200\262\057\131\177\366\207\371\045\103\206\347\151\033
\122\232\220\341\161\343\330\055\015\116\157\366\310\111\331\266

\363\032\126\256\053\266\164\024\353\317\373\046\343\032\272\035
\226\056\152\073\130\224\211\107\126\377\045\240\223\160\123\203
\332\204\164\024\303\147\236\004\150\072\337\216\100\132\035\112
\116\317\103\221\073\347\126\326\000\160\313\122\356\173\175\256
\072\347\274\061\371\105\366\302\140\317\023\131\002\053\200\314
\064\107\337\271\336\220\145\155\002\317\054\221\246\246\347\336
\205\030\111\174\146\116\243\072\155\251\265\356\064\056\272\015
\003\270\063\337\107\353\261\153\215\045\331\233\316\201\321\105
\106\062\226\160\207\336\002\016\111\103\205\266\154\163\273\144
\352\141\101\254\311\324\124\337\207\057\307\042\262\046\314\237
\131\124\150\237\374\276\052\057\304\125\034\165\100\140\027\205
\002\125\071\213\177\005\002\003\001\000\001\243\102\060\100\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\035\006\003\125\035\016\004\026\004\024\234\137\000\337\252
\001\327\060\053\070\210\242\270\155\112\234\362\021\221\203\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202
\001\001\000\113\066\246\204\167\151\335\073\031\237\147\043\010
\157\016\141\311\375\204\334\137\330\066\201\315\330\033\101\055
\237\140\335\307\032\150\331\321\156\206\341\210\043\317\023\336
\103\317\342\064\263\004\235\037\051\325\277\370\136\310\325\301
\275\356\222\157\062\164\362\221\202\057\275\202\102\172\255\056
\267\040\175\115\274\172\125\022\302\025\352\275\367\152\225\056
\154\164\237\317\034\264\362\305\001\243\205\320\162\076\255\163
\253\013\233\165\014\155\105\267\216\224\254\226\067\265\240\320
\217\025\107\016\343\350\203\335\217\375\357\101\001\167\314\047
\251\142\205\063\362\067\010\357\161\317\167\006\336\310\031\035
\210\100\317\175\106\035\377\036\307\341\316\377\043\333\306\372
\215\125\116\251\002\347\107\021\106\076\364\375\275\173\051\046
\273\251\141\142\067\050\266\055\052\366\020\206\144\311\160\247
\322\255\267\051\160\171\352\074\332\143\045\237\375\150\267\060
\354\160\373\165\212\267\155\140\147\262\036\310\271\351\330\250
\157\002\213\147\015\115\046\127\161\332\040\374\301\112\120\215
\261\050\272

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Starfield Services Root Certificate Authority - G2"

Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US

Serial Number: 0 (0x0)

Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US

Not Valid Before: Tue Sep 01 00:00:00 2009

Not Valid After : Thu Dec 31 23:59:59 2037

```
# Fingerprint (SHA-256):
56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5
# Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Services Root
Certificate Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\222\132\217\215\054\155\004\340\146\137\131\152\377\042\330\143
\350\045\157\077
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\027\065\164\257\173\141\034\353\364\371\074\342\356\100\371\242
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073
\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145
\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Commercial"
#
# Issuer: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
# Serial Number:77:77:06:27:26:a9:b1:7c
# Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:06:06 2010
# Not Valid After : Tue Dec 31 14:06:06 2030
# Fingerprint (SHA-256):
03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7
# Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Commercial"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\167\167\006\047\046\251\261\174
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\167
\167\006\047\046\251\261\174\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\104\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013
\101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006
\003\125\004\003\014\026\101\146\146\151\162\155\124\162\165\163
\164\040\103\157\155\155\145\162\143\151\141\154\060\036\027\015
\061\060\060\061\062\071\061\064\060\066\060\066\132\027\015\063
\060\061\062\063\061\061\064\060\066\060\066\132\060\104\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\024\060\022\006
\003\125\004\012\014\013\101\146\146\151\162\155\124\162\165\163
\164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151
\162\155\124\162\165\163\164\040\103\157\155\155\145\162\143\151
\141\154\060\202\001\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\366\033\117\147\007\053\241\025\365\006\042\313\037
\001\262\343\163\105\006\104\111\054\273\111\045\024\326\316\303
\267\253\054\117\306\101\062\224\127\372\022\247\133\016\342\217
\037\036\206\031\247\252\265\055\271\137\015\212\302\257\205\065
\171\062\055\273\034\142\067\362\261\133\112\075\312\315\161\137
\351\102\276\224\350\310\336\371\042\110\144\306\345\253\306\053
\155\255\005\360\372\325\013\317\232\345\360\120\244\213\073\107
```

\245\043\133\172\172\370\063\077\270\357\231\227\343\040\301\326
\050\211\317\224\373\271\105\355\343\100\027\021\324\164\360\013
\061\342\053\046\152\233\114\127\256\254\040\076\272\105\172\005
\363\275\233\151\025\256\175\116\040\143\304\065\166\072\007\002
\311\067\375\307\107\356\350\361\166\035\163\025\362\227\244\265
\310\172\171\331\102\252\053\177\134\376\316\046\117\243\146\201
\065\257\104\272\124\036\034\060\062\145\235\346\074\223\136\120
\116\172\343\072\324\156\314\032\373\371\322\067\256\044\052\253
\127\003\042\050\015\111\165\177\267\050\332\165\277\216\343\334
\016\171\061\002\003\001\000\001\243\102\060\100\060\035\006\003
\125\035\016\004\026\004\024\235\223\306\123\213\136\312\257\077
\237\036\017\345\231\225\274\044\366\224\217\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011
\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000
\130\254\364\004\016\315\300\015\377\012\375\324\272\026\137\051
\275\173\150\231\130\111\322\264\035\067\115\177\047\175\106\006
\135\103\306\206\056\076\163\262\046\175\117\223\251\266\304\052
\232\253\041\227\024\261\336\214\323\253\211\025\330\153\044\324
\361\026\256\330\244\134\324\177\121\216\355\030\001\261\223\143
\275\274\370\141\200\232\236\261\316\102\160\342\251\175\006\045
\175\047\241\376\157\354\263\036\044\332\343\113\125\032\000\073
\065\264\073\331\327\135\060\375\201\023\211\362\302\006\053\355
\147\304\216\311\103\262\134\153\025\211\002\274\142\374\116\362
\265\063\252\262\157\323\012\242\120\343\366\073\350\056\104\302
\333\146\070\251\063\126\110\361\155\033\063\215\015\214\077\140
\067\235\323\312\155\176\064\176\015\237\162\166\213\033\237\162
\375\122\065\101\105\002\226\057\034\262\232\163\111\041\261\111
\107\105\107\264\357\152\064\021\311\115\232\314\131\267\326\002
\236\132\116\145\265\224\256\033\337\051\260\026\361\277\000\236
\007\072\027\144\265\004\265\043\041\231\012\225\073\227\174\357
END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "AffirmTrust Commercial"

Issuer: CN=AffirmTrust Commercial,O=AffirmTrust,C=US

Serial Number:77:77:06:27:26:a9:b1:7c

Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US

Not Valid Before: Fri Jan 29 14:06:06 2010

Not Valid After : Tue Dec 31 14:06:06 2030

Fingerprint (SHA-256):

03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7

Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Commercial"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\371\265\266\062\105\137\234\276\354\127\137\200\334\351\156\054
\307\262\170\267
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\202\222\272\133\357\315\212\157\246\075\125\371\204\366\326\267
END
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\167\167\006\047\046\251\261\174
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Networking"
#
# Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US
# Serial Number:7c:4f:04:39:1c:d4:99:2d
# Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:08:24 2010
# Not Valid After : Tue Dec
31 14:08:24 2030
# Fingerprint (SHA-256):
0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B
# Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Networking"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026

```

\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\174\117\004\071\034\324\231\055
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\174
\117\004\071\034\324\231\055\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\104\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013
\101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006
\003\125\004\003\014\026\101\146\146\151\162\155\124\162\165\163
\164\040\116\145\164\167\157\162\153\151\156\147\060\036\027\015
\061\060\060\061\062\071\061\064\060\070\062\064\132\027\015\063
\060\061\062\063\061\061\064\060\070\062\064\132\060\104\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\024\060\022\006
\003\125\004\012\014\013\101\146\146\151\162\155\124\162\165\163
\164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151
\162\155\124\162\165\163\164\040\116\145\164\167\157\162\153\151
\156\147\060\202\001\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\264\204\314\063\027\056\153\224\154\153\141\122\240
\353\243\317\171\224\114\345\224\200\231\313\125\144\104\145\217
\147\144\342\006\343\134\067\111\366\057\233\204\204\036\055\362
\140\235\060\116\314\204\205\342\054\317\036\236\376\066\253\063
\167\065\104\330\065\226\032\075\066\350\172\016\330\325\107\241
\152\151\213\331\374\273\072\256\171\132\325\364\326\161\273\232
\220\043\153\232\267\210\164\207\014\036\137\271\236\055\372\253
\123\053\334\273\166\076\223\114\010\010\214\036\242\043\034\324
\152\255\042\272\231\001\056\155\145\313\276\044\146\125\044\113
\100\104\261\033\327\341\302\205\300\336\020\077\075\355\270\374
\361\361\043\123\334\277\145\227\157\331\371\100\161\215\175\275
\225\324\316\276\240\136\047\043\336\375\246\320\046\016\000\051
\353\074\106\360\075\140\277\077\120\322\334\046\101\121\236\024
\067\102\004\243\160\127\250\033\207\355\055\372\173\356\214\012
\343\251\146\211\031\313\101\371\335\104\066\141\317\342\167\106
\310\175\366\364\222\201\066\375\333\064\361\162\176\363\014\026
\275\264\025\002\003\001\000\001\243\102\060\100\060\035\006\003

```
\125\035\016\004\026\004\024\007\037\322\347\234\332\302\156\242
\100\264\260\172\120\020\120\164\304\310\275\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000
\211\127\262\026\172\250\302\375\326\331\233\233\064\302\234\264
\062\024\115\247\244\337\354\276\247\276\370\103\333\221\067\316
\264\062\056\120\125\032\065\116\166\103\161\040\357\223\167\116
\025\160\056\207\303\301\035\155\334\313\265\047\324\054\126\321
\122\123\072\104\322\163\310\304\033\005\145\132\142\222\234\356
\101\215\061\333\347\064\352\131\041\325\001\172\327\144\270\144
\071\315\311\355\257\355\113\003\110\247\240\231\001\200\334\145
\243\066\256\145\131\110\117\202\113\310\145\361\127\035\345\131
\056\012\077\154\330\321\365\345\011\264\154\124\000\012\340\025
\115\207\165\155\267\130\226\132\335\155\322\000\240\364\233\110
\276\303\067\244\272\066\340\174\207\205\227\032\025\242\336\056
\242\133\275\257\030\371\220\120\315\160\131\370\047\147\107\313
\307\240\007\072\175\321\054\135\154\031\072\146\265\175\375\221
\157\202\261\276\010\223\333\024\107\361\242\067\307\105\236\074
\307\167\257\144\250\223\337\366\151\203\202\140\362\111\102\064
\355\132\000\124\205\034\026\066\222\014\134\372\246\255\277\333
END
```

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "AffirmTrust Networking"

Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US

Serial Number:7c:4f:04:39:1c:d4:99:2d

Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US

Not Valid Before: Fri Jan

29 14:08:24 2010

Not Valid After : Tue Dec 31 14:08:24 2030

Fingerprint (SHA-256):

0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B

Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AffirmTrust Networking"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\051\066\041\002\213\040\355\002\365\146\305\062\321\326\355\220
\237\105\000\057
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\102\145\312\276\001\232\232\114\251\214\101\111\315\300\325\177
```

```

END
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026
\101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167
\157\162\153\151\156\147
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\174\117\004\071\034\324\231\055
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Premium"
#
# Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Serial Number:6d:8c:14:46:b1:a6:0a:ee
# Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:10:36 2010
# Not Valid After : Mon Dec 31 14:10:36 2040
# Fingerprint (SHA-256):
70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A
# Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155

```


\151\165\155

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\010\155\214\024\106\261\246\012\356

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\106\060\202\003\056\240\003\002\001\002\002\010\155
\214\024\106\261\246\012\356\060\015\006\011\052\206\110\206\367
\015\001\001\014\005\000\060\101\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013
\101\146\146\151\162\155\124\162\165\163\164\061\034\060\032\006
\003\125\004\003\014\023\101\146\146\151\162\155\124\162\165\163
\164\040\120\162\145\155\151\165\155\060\036\027\015\061\060\060
\061\062\071\061\064\061\060\063\066\132\027\015\064\060\061\062
\063\061\061\064\061\060\063\066\132\060\101\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\024\060\022\006\003\125\004
\012\014\013\101\146\146\151\162\155\124\162\165\163\164\061\034
\060\032\006\003\125\004\003\014\023\101\146\146\151\162\155\124
\162\165\163\164\040\120\162\145\155\151\165\155\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\304\022\337
\251\137\376\101\335\335\365\237\212\343\366\254\341\074\170\232
\274\330\360\177\172\240\063\052\334\215\040\133\256\055\157\347
\223\331\066\160\152\150\317\216\121\243\205\133\147\004\240\020
\044\157\135\050\202\301\227\127\330\110\051\023\266\341\276\221
\115\337\205\014\123\030\232\036\044\242\117\217\360\242\205\013
\313\364\051\177\322\244\130\356\046\115\311\252\250\173\232\331
\372\070\336\104\127\025\345\370\214\310\331\110\342\015\026\047
\035\036\310\203\205\045\267\272\252\125\101\314\003\042\113\055
\221\215\213\346\211\257\146\307\351\377\053\351\074\254\332\322
\263\303\341\150\234\211\370\172\000\126\336\364\125\225\154\373
\272\144\335\142\213\337\013\167\062\353\142\314\046\232\233\273
\252\142\203\114\264\006\172\060\310\051\277\355\006\115\227\271
\034\304\061\053\325\137\274\123\022\027\234\231\127\051\146\167
\141\041\061\007\056\045\111\235\030\362\356\363\053\161\214\265
\272\071\007\111\167\374\357\056\222\220\005\215\055\057\167\173
\357\103\277\065\273\232\330\371\163\247\054\362\320\127\356\050
\116\046\137\217\220\150\011\057\270\370\334\006\351\056\232\076
\121\247\321\042\304\012\247\070\110\154\263\371\377\175\253\206
\127\343\272\326\205\170\167\272\103\352\110\177\366\330\276\043
\155\036\277\321\066\154\130\134\361\356\244\031\124\032\365\003
\322\166\346\341\214\275\074\263\323\110\113\342\310\370\177\222
\250\166\106\234\102\145\076\244\036\301\007\003\132\106\055\270
\227\363\267\325\262\125\041\357\272\334\114\000\227\373\024\225
\047\063\277\350\103\107\106\322\010\231\026\140\073\232\176\322
\346\355\070\352\354\001\036\074\110\126\111\011\307\114\067\000
\236\210\016\300\163\341\157\146\351\162\107\060\076\020\345\013
\003\311\232\102\000\154\305\224\176\141\304\212\337\177\202\032

\013\131\304\131\062\167\263\274\140\151\126\071\375\264\006\173
\054\326\144\066\331\275\110\355\204\037\176\245\042\217\052\270
\102\364\202\267\324\123\220\170\116\055\032\375\201\157\104\327
\073\001\164\226\102\340\000\342\056\153\352\305\356\162\254\273
\277\376\352\252\250\370\334\366\262\171\212\266\147\002\003\001
\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004
\024\235\300\147\246\014\042\331\046\365\105\253\246\145\122\021
\047\330\105\254\143\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015
\001\001\014\005\000\003\202\002\001\000\263\127\115\020\142\116
\072\344\254\352\270\034\257\062\043\310\263\111\132\121\234\166
\050\215\171\252\127\106\027\325\365\122\366\267\104\350\010\104
\277\030\204\322\013\200\315\305\022\375\000\125\005\141\207\101
\334\265\044\236\074\304\330\310\373\160\236\057\170\226\203\040
\066\336\174\017\151\023\210\245\165\066\230\010\246\306\337\254
\316\343\130\326\267\076\336\272\363\353\064\100\330\242\201\365
\170\077\057\325\245\374\331\242\324\136\004\016\027\255\376\101
\360\345\262\162\372\104\202\063\102\350\055\130\367\126\214\142
\077\272\102\260\234\014\134\176\056\145\046\134\123\117\000\262
\170\176\241\015\231\055\215\270\035\216\242\304\260\375\140\320
\060\244\216\310\004\142\251\304\355\065\336\172\227\355\016\070
\136\222\057\223\160\245\251\234\157\247\175\023\035\176\306\010
\110\261\136\147\353\121\010\045\351\346\045\153\122\051\221\234
\322\071\163\010\127\336\231\006\264\133\235\020\006\341\302\000
\250\270\034\112\002\012\024\320\301\101\312\373\214\065\041\175
\202\070\362\251\124\221\031\065\223\224\155\152\072\305\262\320
\273\211\206\223\350\233\311\017\072\247\172\270\241\360\170\106
\372\374\067\057\345\212\204\363\337\376\004\331\241\150\240\057
\044\342\011\225\006\325\225\312\341\044\226\353\174\366\223\005
\273\355\163\351\055\321\165\071\327\347\044\333\330\116\137\103
\217\236\320\024\071\277\125\160\110\231\127\061\264\234\356\112
\230\003\226\060\037\140\006\356\033\043\376\201\140\043\032\107
\142\205\245\314\031\064\200\157\263\254\032\343\237\360\173\110
\255\325\001\331\147\266\251\162\223\352\055\146\265\262\270\344
\075\074\262\357\114\214\352\353\007\277\253\065\232\125\206\274
\030\246\265\250\136\264\203\154\153\151\100\323\237\334\361\303
\151\153\271\341\155\011\364\361\252\120\166\012\172\175\172\027
\241\125\226\102\231\061\011\335\140\021\215\005\060\176\346\216
\106\321\235\024\332\307\027\344\005\226\214\304\044\265\033\317
\024\007\262\100\370\243\236\101\206\274\004\320\153\226\310\052
\200\064\375\277\357\006\243\335\130\305\205\075\076\217\376\236
\051\340\266\270\011\150\031\034\030\103

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Trust for "AffirmTrust Premium"
# Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Serial Number:6d:8c:14:46:b1:a6:0a:ee
# Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:10:36 2010
# Not Valid After : Mon Dec 31 14:10:36 2040
# Fingerprint (SHA-256):
70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A
# Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium"
CKA_CERT_SHA1_HASH
MULTILINE_OCTAL
\330\246\063\054\340\003\157\261\205\366\143\117\175\152\006\145
\046\062\050\047
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\304\135\016\110\266\254\050\060\116\012\274\371\070\026\207\127
END
CKA_ISSUER MULTILINE_OCTAL
\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\155\214\024\106\261\246\012\356
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "AffirmTrust Premium ECC"
#
# Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US
# Serial Number:74:97:25:8a:c7:3f:7a:54
# Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US
#
# Not Valid Before: Fri Jan 29 14:20:24 2010
# Not Valid After : Mon Dec 31 14:20:24 2040
# Fingerprint (SHA-256):
```

BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23

Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AffirmTrust Premium ECC"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155\040\105\103\103

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
\151\165\155\040\105\103\103

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\010\164\227\045\212\307\077\172\124

END

CKA_VALUE MULTILINE_OCTAL

\060\202\001\376\060\202\001\205\240\003\002\001\002\002\010\164
\227\045\212\307\077\172\124\060\012\006\010\052\206\110\316\075
\004\003\003\060\105\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\024\060\022\006\003\125\004\012\014\013\101\146\146
\151\162\155\124\162\165\163\164\061\040\060\036\006\003\125\004
\003\014\027\101\146\146\151\162\155\124\162\165\163\164\040\120
\162\145\155\151\165\155\040\105\103\103\060\036\027\015\061\060
\060\061\062\071\061\064\062\060\062\064\132\027\015\064\060\061
\062\063\061\061\064\062\060\062\064\132\060\105\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\024\060\022\006\003\125
\004\012\014\013\101\146\146\151\162\155\124\162\165\163\164\061
\040\060\036\006\003\125\004\003\014\027\101\146\146\151\162\155
\124\162\165\163\164\040\120\162\145\155\151\165\155\040\105\103
\103\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\015\060\136\033\025\235\003
\320\241\171\065\267\072\074\222\172\312\025\034\315\142\363\234
\046\134\007\075\345\124\372\243\326\314\022\352\364\024\137\350
\216\031\253\057\056\110\346\254\030\103\170\254\320\067\303\275
\262\315\054\346\107\342\032\346\143\270\075\056\057\170\304\117
\333\364\017\244\150\114\125\162\153\225\035\116\030\102\225\170

```
\314\067\074\221\342\233\145\053\051\243\102\060\100\060\035\006
\003\125\035\016\004\026\004\024\232\257\051\172\300\021\065\065
\046\121\060\000\303\152\376\100\325\256\326\074\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\012\006
\010\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060
\027\011\363\207\210\120\132\257\310\300\102\277\107\137\365\154
\152\206\340\304\047\164\344\070\123\327\005\177\033\064\343\306
\057\263\312\011\074\067\235\327\347\270\106\361\375\241\342\161
\002\060\102\131\207\103\324\121\337\272\323\011\062\132\316\210
\176\127\075\234\137\102\153\365\007\055\265\360\202\223\371\131
\157\256\144\372\130\345\213\036\343\143\276\265\201\315\157\002
\214\171
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "AffirmTrust Premium ECC"

Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

Serial Number:74:97:25:8a:c7:3f:7a:54

Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

Not Valid Before: Fri Jan 29 14:20:24 2010

Not Valid After : Mon Dec 31 14:20:24 2040

Fingerprint (SHA-256):

BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23

Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AffirmTrust Premium ECC"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\270\043\153\000\057\035\026\206\123\001\125\154\021\244\067\312
```

```
\353\377\303\273
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\144\260\011\125\317\261\325\231\342\276\023\253\246\135\352\115
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
```

```
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
```

```
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027
```

```
\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155
```

```
\151\165\155\040\105\103\103
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\164\227\045\212\307\077\172\124
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "Certum Trusted Network CA"
#
# Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
# Serial Number: 279744 (0x444c0)
# Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
# Not Valid Before: Wed Oct 22 12:07:37 2008
# Not Valid After : Mon Dec 31 12:07:37 2029
# Fingerprint (SHA-256):
5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E
# Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Trusted Network CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
```

\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\004\104\300
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\003\273\060\202\002\243\240\003\002\001\002\002\003\004
\104\300\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060
\040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\060\036\027\015\060\070\061\060\062\062\061\062\060\067\063
\067\132\027\015\062\071\061\062\063\061\061\062\060\067\063\067
\132\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060
\040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\343\373\175\243\162\272\302\360\311\024\207\365\153\001
\116\341\156\100\007\272\155\047\135\177\367\133\055\263\132\307
\121\137\253\244\062\246\141\207\266\156\017\206\322\060\002\227
\370\327\151\127\241\030\071\135\152\144\171\306\001\131\254\074
\061\112\070\174\322\004\322\113\050\350\040\137\073\007\242\314
\115\163\333\363\256\117\307\126\325\132\247\226\211\372\363\253
\150\324\043\206\131\047\317\011\047\274\254\156\162\203\034\060
\162\337\340\242\351\322\341\164\165\031\275\052\236\173\025\124
\004\033\327\103\071\255\125\050\305\342\032\273\364\300\344\256
\070\111\063\314\166\205\237\071\105\322\244\236\362\022\214\121
\370\174\344\055\177\365\254\137\353\026\237\261\055\321\272\314
\221\102\167\114\045\311\220\070\157\333\360\314\373\216\036\227
\131\076\325\140\116\346\005\050\355\111\171\023\113\272\110\333
\057\371\162\323\071\312\376\037\330\064\162\365\264\100\317\061
\001\303\354\336\021\055\027\135\037\270\120\321\136\031\247\151
\336\007\063\050\312\120\225\371\247\124\313\124\206\120\105\251
\371\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\010\166\315\313\007\377\044\366\305

```
\315\355\273\220\274\342\204\067\106\165\367\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\246
\250\255\042\316\001\075\246\243\377\142\320\110\235\213\136\162
\260\170\104\343\334\034\257\011\375\043\110\372\275\052\304\271
\125\004\265\020\243\215\047\336\013\202\143\320\356\336\014\067
\171\101\133\042\262\260\232\101\134\246\160\340\324\320\167\313
\043\323\000\340\154\126\057\341\151\015\015\331\252\277\041\201
\120\331\006\245\250\377\225\067\320\252\376\342\263\365\231\055
\105\204\212\345\102\011\327\164\002\057\367\211\330\231\351\274
\047\324\107\215\272\015\106\034\167\317\024\244\034\271\244\061
\304\234\050\164\003\064\377\063\031\046\245\351\015\164\267\076
\227\306\166\350\047\226\243\146\335\341\256\362\101\133\312\230
\126\203\163\160\344\206\032\322\061\101\272\057\276\055\023\132
\166\157\116\350\116\201\016\077\133\003\042\240\022\276\146\130
\021\112\313\003\304\264\052\052\055\226\027\340\071\124\274\110
\323\166\047\235\232\055\006\246\311\354\071\322\253\333\237\232
\013\047\002\065\051\261\100\225\347\371\350\234\125\210\031\106
\326\267\064\365\176\316\071\232\331\070\361\121\367\117\054
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Certum Trusted Network CA"

Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL

Serial Number: 279744 (0x444c0)

Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL

Not Valid Before: Wed Oct 22 12:07:37 2008

Not Valid After : Mon Dec 31 12:07:37 2029

Fingerprint (SHA-256):

5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E

Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certum Trusted Network CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\007\340\062\340\040\267\054\077\031\057\006\050\242\131\072\031
\247\017\006\236
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\325\351\201\100\305\030\151\374\106\054\211\165\142\017\252\170
```



```

END
CKA_ISSUER
MULTILINE_OCTAL
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\004\104\300
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TWCA Root Certification Authority"
#
# Issuer: CN=TWCA Root Certification Authority,OU=Root
CA,O=TAIWAN-CA,C=TW
# Serial Number: 1 (0x1)
# Subject: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW
# Not Valid Before: Thu Aug 28 07:24:33 2008
# Not Valid After : Tue Dec 31 15:59:59 2030
# Fingerprint (SHA-256):
BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44
# Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TWCA Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID

```

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\173\060\202\002\143\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061\022
\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116\055
\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157\157
\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041\124
\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\060\036\027\015\060\070\060\070\062\070\060\067\062\064\063\063
\132\027\015\063\060\061\062\063\061\061\065\065\071\065\071\132
\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\260\176\162\270\244\003\224\346\247\336\011\070\221\112
\021\100\207\247\174\131\144\024\173\265\021\020\335\376\277\325
\300\273\126\342\205\045\364\065\162\017\370\123\320\101\341\104
\001\302\264\034\303\061\102\026\107\205\063\042\166\262\012\157
\017\345\045\120\117\205\206\276\277\230\056\020\147\036\276\021
\005\206\005\220\304\131\320\174\170\020\260\200\134\267\341\307
\053\165\313\174\237\256\265\321\235\043\067\143\247\334\102\242
\055\222\004\033\120\301\173\270\076\033\311\126\004\213\057\122
\233\255\251\126\351\301\377\255\251\130\207\060\266\201\367\227
\105\374\031\127\073\053\157\344\107\364\231\105\376\035\361\370
\227\243\210\035\067\034\134\217\340\166\045\232\120\370\240\124
\377\104\220\166\043\322\062\306\303\253\006\277\374\373\277\363
\255\175\222\142\002\133\051\323\065\243\223\232\103\144\140\135
\262\372\062\377\073\004\257\115\100\152\371\307\343\357\043\375
\153\313\345\017\213\070\015\356\012\374\376\017\230\237\060\061
\335\154\122\145\371\213\201\276\042\341\034\130\003\272\221\033

```
\211\007\002\003\001\000\001\243\102\060\100\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\152\070\133\046\215\336\213\132\362
\117\172\124\203\031\030\343\010\065\246\272\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\074
\325\167\075\332\337\211\272\207\014\010\124\152\040\120\222\276
\260\101\075\271\046\144\203\012\057\350\100\300\227\050\047\202
\060\112\311\223\377\152\347\246\000\177\211\102\232\326\021\345
\123\316\057\314\362\332\005\304\376\342\120\304\072\206\175\314
\332\176\020\011\073\222\065\052\123\262\376\353\053\005\331\154
\135\346\320\357\323\152\146\236\025\050\205\172\350\202\000\254
\036\247\011\151\126\102\323\150\121\030\276\124\232\277\104\101
\272\111\276\040\272\151\134\356\270\167\315\316\154\037\255\203
\226\030\175\016\265\024\071\204\361\050\351\055\243\236\173\036
\172\162\132\203\263\171\157\357\264\374\320\012\245\130\117\106
\337\373\155\171\131\362\204\042\122\256\017\314\373\174\073\347
\152\312\107\141\303\172\370\323\222\004\037\270\040\204\341\066
\124\026\307\100\336\073\212\163\334\337\306\011\114\337\354\332
\377\324\123\102\241\311\362\142\035\042\203\074\227\305\371\031
\142\047\254\145\042\327\323\074\306\345\216\262\123\314\111\316
\274\060\376\173\016\063\220\373\355\322\024\221\037\007\257
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "TWCA Root Certification Authority"

Issuer: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW

Serial Number: 1 (0x1)

Subject: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW

Not Valid Before: Thu Aug 28 07:24:33 2008

Not Valid After : Tue Dec 31 15:59:59 2030

Fingerprint (SHA-256):

BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44

Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TWCA Root Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\317\236\207\155\323\353\374\102\046\227\243\265\243\172\240\166
\251\006\043\110
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\252\010\217\366\371\173\267\362\261\247\036\233\352\352\275\171

END

CKA_ISSUER MULTILINE_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061

\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116

\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157

\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041

\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146

\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164

\171

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\001

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

#

Certificate "Explicitly Distrust DigiNotar Root CA"

#

Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff

Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

Not Valid Before: Fri Jul 27 17:19:37 2007

Not Valid After : Mon Mar 31 18:19:22 2025

Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E

Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061

\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157

\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151

\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061

\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021

\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156

\154

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\017\377\377\377\377\377\377\377\377\377\377\377\377
\377\377

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\212\060\202\003\162\240\003\002\001\002\002\020\017
\377\377\377\377\377\377\377\377\377\377\377\377\377\377\377\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\137
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022\060
\020\006\003\125\004\012\023\011\104\151\147\151\116\157\164\141
\162\061\032\060\030\006\003\125\004\003\023\021\104\151\147\151
\116\157\164\141\162\040\122\157\157\164\040\103\101\061\040\060
\036\006\011\052\206\110\206\367\015\001\011\001\026\021\151\156
\146\157\100\144\151\147\151\156\157\164\141\162\056\156\154\060
\036\027\015\060\067\060\067\062\067\061\067\061\071\063\067\132
\027\015\062\065\060\063\063\061\061\070\061\071\062\062\132\060
\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022
\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157\164
\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151\147
\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061\040
\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021\151
\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156\154
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\254\260\130\301\000\275\330\041\010\013\053\232\376\156\126
\060\005\237\033\167\220\020\101\134\303\015\207\021\167\216\201
\361\312\174\351\214\152\355\070\164\065\273\332\337\371\273\300
\011\067\264\226\163\201\175\063\032\230\071\367\223\157\225\177
\075\271\261\165\207\272\121\110\350\213\160\076\225\004\305\330
\266\303\026\331\210\260\261\207\035\160\332\206\264\017\024\213
\172\317\020\321\164\066\242\022\173\167\206\112\171\346\173\337
\002\021\150\245\116\206\256\064\130\233\044\023\170\126\042\045
\036\001\213\113\121\161\373\202\314\131\226\151\210\132\150\123
\305\271\015\002\067\313\113\274\146\112\220\176\052\013\005\007
\355\026\137\125\220\165\330\106\311\033\203\342\010\276\361\043
\314\231\035\326\052\017\203\040\025\130\047\202\056\372\342\042
\302\111\261\271\001\201\152\235\155\235\100\167\150\166\116\041
\052\155\204\100\205\116\166\231\174\202\363\363\267\002\131\324
\046\001\033\216\337\255\123\006\321\256\030\335\342\262\072\313
\327\210\070\216\254\133\051\271\031\323\230\371\030\003\317\110

\202\206\146\013\033\151\017\311\353\070\210\172\046\032\005\114
\222\327\044\324\226\362\254\122\055\243\107\325\122\366\077\376
\316\204\006\160\246\252\076\242\362\266\126\064\030\127\242\344
\201\155\347\312\360\152\323\307\221\153\002\203\101\174\025\357
\153\232\144\136\343\320\074\345\261\353\173\135\206\373\313\346
\167\111\315\243\145\334\367\271\234\270\344\013\137\223\317\314
\060\032\062\034\316\034\143\225\245\371\352\341\164\213\236\351
\053\251\060\173\240\030\037\016\030\013\345\133\251\323\321\154
\036\007\147\217\221\113\251\212\274\322\146\252\223\001\210\262
\221\372\061\134\325\246\301\122\010\011\315\012\143\242\323\042
\246\350\241\331\071\006\227\365\156\215\002\220\214\024\173\077
\200\315\033\234\272\304\130\162\043\257\266\126\237\306\172\102
\063\051\007\077\202\311\346\037\005\015\315\114\050\066\213\323
\310\076\034\306\210\357\136\356\211\144\351\035\353\332\211\176
\062\246\151\321\335\314\210\237\321\320\311\146\041\334\006\147
\305\224\172\232\155\142\114\175\314\340\144\200\262\236\107\216
\243\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125
\035\016\004\026\004\024\210\150\277\340\216\065\304\073\070\153
\142\367\050\073\204\201\310\014\327\115\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\073\002
\215\313\074\060\350\156\240\255\362\163\263\137\236\045\023\004
\005\323\366\343\213\273\013\171\316\123\336\344\226\305\321\257
\163\274\325\303\320\100\125\174\100\177\315\033\137\011\325\362
\174\237\150\035\273\135\316\172\071\302\214\326\230\173\305\203
\125\250\325\175\100\312\340\036\367\211\136\143\135\241\023\302
\135\212\266\212\174\000\363\043\303\355\205\137\161\166\360\150
\143\252\105\041\071\110\141\170\066\334\361\103\223\324\045\307
\362\200\145\341\123\002\165\121\374\172\072\357\067\253\204\050
\127\014\330\324\324\231\126\154\343\242\376\131\204\264\061\350
\063\370\144\224\224\121\227\253\071\305\113\355\332\335\200\013
\157\174\051\015\304\216\212\162\015\347\123\024\262\140\101\075
\204\221\061\150\075\047\104\333\345\336\364\372\143\105\310\114
\076\230\365\077\101\272\116\313\067\015\272\146\230\361\335\313
\237\134\367\124\066\202\153\054\274\023\141\227\102\370\170\273
\314\310\242\237\312\360\150\275\153\035\262\337\215\157\007\235
\332\216\147\307\107\036\312\271\277\052\102\221\267\143\123\146
\361\102\243\341\364\132\115\130\153\265\344\244\063\255\134\160
\035\334\340\362\353\163\024\221\232\003\301\352\000\145\274\007
\374\317\022\021\042\054\256\240\275\072\340\242\052\330\131\351
\051\323\030\065\244\254\021\137\031\265\265\033\377\042\112\134
\306\172\344\027\357\040\251\247\364\077\255\212\247\232\004\045
\235\016\312\067\346\120\375\214\102\051\004\232\354\271\317\113
\162\275\342\010\066\257\043\057\142\345\312\001\323\160\333\174
\202\043\054\026\061\014\306\066\007\220\172\261\037\147\130\304
\073\130\131\211\260\214\214\120\263\330\206\313\150\243\304\012
\347\151\113\040\316\301\036\126\113\225\251\043\150\330\060\330

\303\353\260\125\121\315\345\375\053\270\365\273\021\237\123\124
\366\064\031\214\171\011\066\312\141\027\045\027\013\202\230\163
\014\167\164\303\325\015\307\250\022\114\307\247\124\161\107\056
\054\032\175\311\343\053\073\110\336\047\204\247\143\066\263\175
\217\240\144\071\044\015\075\173\207\257\146\134\164\033\113\163
\262\345\214\360\206\231\270\345\305\337\204\301\267\353

END

#

Trust for Certificate "Explicitly Distrust DigiNotar Root CA"

Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff

Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL

Not Valid Before: Fri Jul 27 17:19:37 2007

Not Valid After : Mon Mar 31 18:19:22 2025

Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E

Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\301\167\313\113\340\264\046\216\365\307\317\105\231\042\271\260
\316\272\041\057

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\012\244\325\314\272\264\373\243\131\343\346\001\335\123\331\116
END

CKA_ISSUER MULTILINE_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\017\377\377\377\377\377\377\377\377\377\377\377\377\377
\377\377

END

CKA_TRUST_SERVER_AUTH CK_TRUST

CKT_NSS_NOT_TRUSTED

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_NOT_TRUSTED

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_NOT_TRUSTED

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```
#
# Certificate "Security Communication RootCA2"
#
# Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Fri May 29 05:00:39 2009
# Not Valid After : Tue May 29 05:00:39 2029
# Fingerprint (SHA-256):
51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6
# Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\167\060\202\002\137\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045
\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124
\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056
\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036
\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151
\143\141\164\151\157\156\040\122\157\157\164\103\101\062\060\036
```


\027\015\060\071\060\065\062\071\060\065\060\060\063\071\132\027
\015\062\071\060\065\062\071\060\065\060\060\063\071\132\060\135
\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045\060
\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124\162
\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056\054
\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036\123
\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151\143
\141\164\151\157\156\040\122\157\157\164\103\101\062\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\320\025
\071\122\261\122\263\272\305\131\202\304\135\122\256\072\103\145
\200\113\307\362\226\274\333\066\227\326\246\144\214\250\136\360
\343\012\034\367\337\227\075\113\256\366\135\354\041\265\101\253
\315\271\176\166\237\276\371\076\066\064\240\073\301\366\061\021
\105\164\223\075\127\200\305\371\211\231\312\345\253\152\324\265
\332\101\220\020\301\326\326\102\211\302\277\364\070\022\225\114
\124\005\367\066\344\105\203\173\024\145\326\334\014\115\321\336
\176\014\253\073\304\025\276\072\126\246\132\157\166\151\122\251
\172\271\310\353\152\232\135\122\320\055\012\153\065\026\011\020
\204\320\152\312\072\006\000\067\107\344\176\127\117\077\213\353
\147\270\210\252\305\276\123\125\262\221\304\175\271\260\205\031
\006\170\056\333\141\032\372\205\365\112\221\241\347\026\325\216
\242\071\337\224\270\160\037\050\077\213\374\100\136\143\203\074
\203\052\032\231\153\317\336\131\152\073\374\157\026\327\037\375
\112\020\353\116\202\026\072\254\047\014\123\361\255\325\044\260
\153\003\120\301\055\074\026\335\104\064\047\032\165\373\002\003
\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026
\004\024\012\205\251\167\145\005\230\174\100\201\370\017\227\054
\070\361\012\354\074\317\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\003\202\001\001\000\114\072\243\104\254
\271\105\261\307\223\176\310\013\012\102\337\144\352\034\356\131
\154\010\272\211\137\152\312\112\225\236\172\217\007\305\332\105
\162\202\161\016\072\322\314\157\247\264\241\043\273\366\044\237
\313\027\376\214\246\316\302\322\333\314\215\374\161\374\003\051
\301\154\135\063\137\144\266\145\073\211\157\030\166\170\365\334
\242\110\037\031\077\216\223\353\361\372\027\356\315\116\343\004
\022\125\326\345\344\335\373\076\005\174\342\035\136\306\247\274
\227\117\150\072\365\351\056\012\103\266\257\127\134\142\150\174
\267\375\243\212\204\240\254\142\276\053\011\207\064\360\152\001
\273\233\051\126\074\376\000\067\317\043\154\361\116\252\266\164
\106\022\154\221\356\064\325\354\232\221\347\104\276\220\061\162
\325\111\002\366\002\345\364\037\353\174\331\226\125\251\377\354
\212\371\231\107\377\065\132\002\252\004\313\212\133\207\161\051
\221\275\244\264\172\015\275\232\365\127\043\000\007\041\027\077
\112\071\321\005\111\013\247\266\067\201\245\135\214\252\063\136
\201\050\174\247\175\047\353\000\256\215\067

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "Security Communication RootCA2"
# Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Fri May 29 05:00:39 2009
# Not Valid After : Tue May 29 05:00:39 2029
# Fingerprint (SHA-256):
51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6
#
Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\137\073\214\362\370\020\263\175\170\264\316\354\031\031\303\163
\064\271\307\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\154\071\175\244\016\125\131\262\077\326\101\261\022\120\336\103
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Actalis Authentication Root CA"
#

```

```
# Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
# Serial Number:57:0a:11:97:42:c4:e3:cc
# Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
# Not Valid Before: Thu Sep 22 11:22:02 2011
# Not Valid After : Sun Sep 22 11:22:02 2030
# Fingerprint (SHA-256):
55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66
# Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Actalis Authentication Root CA"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\127\012\021\227\102\304\343\314
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\273\060\202\003\243\240\003\002\001\002\002\010\127
\012\021\227\102\304\343\314\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\153\061\013\060\011\006\003\125\004
\006\023\002\111\124\061\016\060\014\006\003\125\004\007\014\005
\115\151\154\141\156\061\043\060\041\006\003\125\004\012\014\032
\101\143\164\141\154\151\163\040\123\056\160\056\101\056\057\060
\063\063\065\070\065\062\060\071\066\067\061\047\060\045\006\003
\125\004\003\014\036\101\143\164\141\154\151\163\040\101\165\164
\150\145\156\164\151\143\141\164\151\157\156\040\122\157\157\164
```

\040\103\101\060\036\027\015\061\061\060\071\062\062\061\061\062
\062\060\062\132\027\015\063\060\060\071\062\062\061\061\062\062
\060\062\132\060\153\061\013\060\011\006\003\125\004\006\023\002
\111\124\061\016\060\014\006\003\125\004\007\014\005\115\151\154
\141\156\061\043\060\041\006\003\125\004\012\014\032\101\143\164
\141\154\151\163\040\123\056\160\056\101\056\057\060\063\063\065
\070\065\062\060\071\066\067\061\047\060\045\006\003\125\004\003
\014\036\101\143\164\141\154\151\163\040\101\165\164\150\145\156
\164\151\143\141\164\151\157\156\040\122\157\157\164\040\103\101
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\247\306\304\245\051\244\054\357\345\030\305\260\120\243\157
\121\073\237\012\132\311\302\110\070\012\302\034\240\030\177\221
\265\207\271\100\077\335\035\150\037\010\203\325\055\036\210\240
\370\217\126\217\155\231\002\222\220\026\325\137\010\154\211\327
\341\254\274\040\302\261\340\203\121\212\151\115\000\226\132\157
\057\300\104\176\243\016\344\221\315\130\356\334\373\307\036\105
\107\335\047\271\010\001\237\246\041\035\365\101\055\057\114\375
\050\255\340\212\255\042\264\126\145\216\206\124\217\223\103\051
\336\071\106\170\243\060\043\272\315\360\175\023\127\300\135\322
\203\153\110\114\304\253\237\200\132\133\072\275\311\247\042\077
\200\047\063\133\016\267\212\014\135\007\067\010\313\154\322\172
\107\042\104\065\305\314\314\056\216\335\052\355\267\175\146\015
\137\141\121\042\125\033\343\106\343\343\075\320\065\142\232\333
\257\024\310\133\241\314\211\033\341\060\046\374\240\233\037\201
\247\107\037\004\353\243\071\222\006\237\231\323\277\323\352\117
\120\234\031\376\226\207\036\074\145\366\243\030\044\203\206\020
\347\124\076\250\072\166\044\117\201\041\305\343\017\002\370\223
\224\107\040\273\376\324\016\323\150\271\335\304\172\204\202\343
\123\124\171\335\333\234\322\362\007\233\056\266\274\076\355\205
\155\357\045\021\362\227\032\102\141\367\112\227\350\213\261\020
\007\372\145\201\262\242\071\317\367\074\377\030\373\306\361\132
\213\131\342\002\254\173\222\320\116\024\117\131\105\366\014\136
\050\137\260\350\077\105\317\317\257\233\157\373\204\323\167\132
\225\157\254\224\204\236\356\274\300\112\217\112\223\370\104\041
\342\061\105\141\120\116\020\330\343\065\174\114\031\264\336\005
\277\243\006\237\310\265\315\344\037\327\027\006\015\172\225\164
\125\015\150\032\374\020\033\142\144\235\155\340\225\240\303\224
\007\127\015\024\346\275\005\373\270\237\346\337\213\342\306\347
\176\226\366\123\305\200\064\120\050\130\360\022\120\161\027\060
\272\346\170\143\274\364\262\255\233\053\262\376\341\071\214\136
\272\013\040\224\336\173\203\270\377\343\126\215\267\021\351\073
\214\362\261\301\135\235\244\013\114\053\331\262\030\365\265\237
\113\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035
\016\004\026\004\024\122\330\210\072\310\237\170\146\355\211\363
\173\070\160\224\311\002\002\066\320\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035
\043\004\030\060\026\200\024\122\330\210\072\310\237\170\146\355

\211\363\173\070\160\224\311\002\002\066\320\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\013
\173\162\207\300\140\246\111\114\210\130\346\035\210\367\024\144
\110\246\330\130\012\016\117\023\065\337\065\035\324\355\006\061
\310\201\076\152\325\335\073\032\062\356\220\075\021\322\056\364
\216\303\143\056\043\146\260\147\276\157\266\300\023\071\140\252
\242\064\045\223\165\122\336\247\235\255\016\207\211\122\161\152
\026\074\031\035\203\370\232\051\145\276\364\077\232\331\360\363
\132\207\041\161\200\115\313\340\070\233\077\273\372\340\060\115
\317\206\323\145\020\031\030\321\227\002\261\053\162\102\150\254
\240\275\116\132\332\030\277\153\230\201\320\375\232\276\136\025
\110\315\021\025\271\300\051\134\264\350\210\367\076\066\256\267
\142\375\036\142\336\160\170\020\034\110\133\332\274\244\070\272
\147\355\125\076\136\127\337\324\003\100\114\201\244\322\117\143
\247\011\102\011\024\374\000\251\302\200\163\117\056\300\100\331
\021\173\110\352\172\002\300\323\353\050\001\046\130\164\301\300
\163\042\155\223\225\375\071\175\273\052\343\366\202\343\054\227
\137\116\037\221\224\372\376\054\243\330\166\032\270\115\262\070
\117\233\372\035\110\140\171\046\342\363\375\251\320\232\350\160
\217\111\172\326\345\275\012\016\333\055\363\215\277\353\343\244
\175\313\307\225\161\350\332\243\174\305\302\370\164\222\004\033
\206\254\244\042\123\100\266\254\376\114\166\317\373\224\062\300
\065\237\166\077\156\345\220\156\240\246\046\242\270\054\276\321
\053\205\375\247\150\310\272\001\053\261\154\164\035\270\163\225
\347\356\267\307\045\360\000\114\000\262\176\266\013\213\034\363
\300\120\236\045\271\340\010\336\066\146\377\067\245\321\273\124
\144\054\311\047\265\113\222\176\145\377\323\055\341\271\116\274
\177\244\101\041\220\101\167\246\071\037\352\236\343\237\320\146
\157\005\354\252\166\176\277\153\026\240\353\265\307\374\222\124
\057\053\021\047\045\067\170\114\121\152\260\363\314\130\135\024
\361\152\110\025\377\302\007\266\261\215\017\216\134\120\106\263
\075\277\001\230\117\262\131\124\107\076\064\173\170\155\126\223
\056\163\352\146\050\170\315\035\024\277\240\217\057\056\270\056
\216\362\024\212\314\351\265\174\373\154\235\014\245\341\226

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Actalis Authentication Root CA"

Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT

Serial Number:57:0a:11:97:42:c4:e3:cc

Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT

Not Valid Before: Thu Sep 22 11:22:02 2011

Not Valid After : Sun Sep 22 11:22:02 2030

Fingerprint (SHA-256):

```

55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66
# Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Actalis Authentication Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\363\163\263\207\006\132\050\204\212\362\363\112\316\031\053\335
\307\216\234\254
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\151\301\015\117\007\243\033\303\376\126\075\004\274\021\366\246
END
CKA_ISSUER MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\127\012\021\227\102\304\343\314
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Buypass Class 2 Root
CA"
#
# Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO
# Serial Number: 2 (0x2)
# Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO
# Not Valid Before: Tue Oct 26 08:38:03 2010
# Not Valid After : Fri Oct 26 08:38:03 2040
# Fingerprint (SHA-256):
9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48
# Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "Bypass Class 2 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\002
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\131\060\202\003\101\240\003\002\001\002\002\001\002
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040
\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060
\036\027\015\061\060\061\060\062\066\060\070\063\070\060\063\132
\027\015\064\060\061\060\062\066\060\070\063\070\060\063\132\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040
\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000
\327\307\136\367\301\007\324\167\373\103\041\364\364\365\151\344
\356\062\001\333\243\206\037\344\131\015\272\347\165\203\122\353
\352\034\141\025\110\273\035\007\312\214\256\260\334\226\235\352
\303\140\222\206\202\050\163\234\126\006\377\113\144\360\014\052
\067\111\265\345\317\014\174\356\361\112\273\163\060\145\363\325
\057\203\266\176\343\347\365\236\253\140\371\323\361\235\222\164
\212\344\034\226\254\133\200\351\265\364\061\207\243\121\374\307
\176\241\157\216\123\167\324\227\301\125\063\222\076\030\057\165
\324\255\206\111\313\225\257\124\006\154\330\006\023\215\133\377
\341\046\031\131\300\044\272\201\161\171\220\104\120\150\044\224
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\137\270\263\021\361\051\101\141\243\101\313\043\066\325\301\361
\062\120\020\116\177\364\206\223\354\204\323\216\274\113\277\134
\001\116\007\075\334\024\212\224\012\244\352\163\373\013\121\350
\023\007\030\372\016\361\053\321\124\025\175\074\341\367\264\031
\102\147\142\136\167\340\242\125\354\266\331\151\027\325\072\257
\104\355\112\305\236\344\172\047\174\345\165\327\252\313\045\347
\337\153\012\333\017\115\223\116\250\240\315\173\056\362\131\001
\152\267\015\270\007\201\176\213\070\033\070\346\012\127\231\075
\356\041\350\243\365\014\026\335\213\354\064\216\234\052\034\000
\025\027\215\150\203\322\160\237\030\010\315\021\150\325\311\153
\122\315\304\106\217\334\265\363\330\127\163\036\351\224\071\004
\277\323\336\070\336\264\123\354\151\034\242\176\304\217\344\033
\160\255\362\242\371\373\367\026\144\146\151\237\111\121\242\342
\025\030\147\006\112\177\325\154\265\115\263\063\340\141\353\135
\276\351\230\017\062\327\035\113\074\056\132\001\122\221\011\362
\337\352\215\330\006\100\143\252\021\344\376\303\067\236\024\122
\077\364\342\314\362\141\223\321\375\147\153\327\122\256\277\150
\253\100\103\240\127\065\123\170\360\123\370\141\102\007\144\306
\327\157\233\114\070\015\143\254\142\257\066\213\242\163\012\015
\365\041\275\164\252\115\352\162\003\111\333\307\137\035\142\143
\307\375\335\221\354\063\356\365\155\264\156\060\150\336\310\326
\046\260\165\136\173\264\007\040\230\241\166\062\270\115\154\117
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\311\200\167\340\142\222\202\365\106\234\363
\272\367\114\303\336\270\243\255\071\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\003\202\002\001\000\123\137\041
\365\272\260\072\122\071\054\222\260\154\000\311\357\316\040\357
\006\362\226\236\351\244\164\177\172\026\374\267\365\266\373\025
\033\077\253\246\300\162\135\020\261\161\356\274\117\343\255\254
\003\155\056\161\056\257\304\343\255\243\275\014\021\247\264\377
\112\262\173\020\020\037\247\127\101\262\300\256\364\054\131\326
\107\020\210\363\041\121\051\060\312\140\206\257\106\253\035\355
\072\133\260\224\336\104\343\101\010\242\301\354\035\326\375\117
\266\326\107\320\024\013\312\346\312\265\173\167\176\101\037\136
\203\307\266\214\071\226\260\077\226\201\101\157\140\220\342\350
\371\373\042\161\331\175\263\075\106\277\264\204\257\220\034\017
\217\022\152\257\357\356\036\172\256\002\112\212\027\053\166\376
\254\124\211\044\054\117\077\266\262\247\116\214\250\221\227\373
\051\306\173\134\055\271\313\146\266\267\250\133\022\121\205\265
\011\176\142\170\160\376\251\152\140\266\035\016\171\014\375\312
\352\044\200\162\303\227\077\362\167\253\103\042\012\307\353\266
\014\204\202\054\200\153\101\212\010\300\353\245\153\337\231\022
\313\212\325\136\200\014\221\340\046\010\066\110\305\372\070\021
\065\377\045\203\055\362\172\277\332\375\216\376\245\313\105\054
\037\304\210\123\256\167\016\331\232\166\305\216\054\035\243\272
\325\354\062\256\300\252\254\367\321\172\115\353\324\007\342\110


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\367\042\216\260\244\237\152\316\216\262\262\140\364\243\042\320
\043\353\224\132\172\151\335\017\277\100\127\254\153\131\120\331
\243\231\341\156\376\215\001\171\047\043\025\336\222\235\173\011
\115\132\347\113\110\060\132\030\346\012\155\346\217\340\322\273
\346\337\174\156\041\202\301\150\071\115\264\230\130\146\142\314
\112\220\136\303\372\047\004\261\171\025\164\231\314\276\255\040
\336\046\140\034\353\126\121\246\243\352\344\243\077\247\377\141
\334\361\132\115\154\062\043\103\356\254\250\356\356\112\022\011
\074\135\161\302\276\171\372\302\207\150\035\013\375\134\151\314
\006\320\232\175\124\231\052\311\071\032\031\257\113\052\103\363
\143\135\132\130\342\057\343\035\344\251\326\320\012\320\236\277
\327\201\011\361\311\307\046\015\254\230\026\126\240
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Buypass Class 2 Root CA"

Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

Serial Number: 2 (0x2)

Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

Not Valid Before: Tue Oct 26 08:38:03 2010

Not Valid After : Fri Oct 26 08:38:03 2040

Fingerprint (SHA-256):

9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48

Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Buypass Class 2 Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\111\012\165\164\336\207\012\107\376\130\356\366\307\153\353\306
\013\022\100\231
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\106\247\322\376\105\373\144\132\250\131\220\233\170\104\233\051
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\001\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Buypass Class 3 Root CA"
#
# Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
# Serial Number: 2 (0x2)
# Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO
# Not Valid Before: Tue Oct 26 08:28:58 2010
# Not Valid After : Fri Oct 26 08:28:58
2040
# Fingerprint (SHA-256):
ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D
# Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Buypass Class 3 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\002
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\131\060\202\003\101\240\003\002\001\002\002\001\002
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035

```

\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040
\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\060
\036\027\015\061\060\061\060\062\066\060\070\062\070\065\070\132
\027\015\064\060\061\060\062\066\060\070\062\070\065\070\132\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035
\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163
\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060
\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040
\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\060
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000
\245\332\012\225\026\120\343\225\362\136\235\166\061\006\062\172
\233\361\020\166\270\000\232\265\122\066\315\044\107\260\237\030
\144\274\232\366\372\325\171\330\220\142\114\042\057\336\070\075
\326\340\250\351\034\054\333\170\021\351\216\150\121\025\162\307
\363\063\207\344\240\135\013\134\340\127\007\052\060\365\315\304
\067\167\050\115\030\221\346\277\325\122\375\161\055\160\076\347
\306\304\212\343\360\050\013\364\166\230\241\213\207\125\262\072
\023\374\267\076\047\067\216\042\343\250\117\052\357\140\273\075
\267\071\303\016\001\107\231\135\022\117\333\103\372\127\241\355
\371\235\276\021\107\046\133\023\230\253\135\026\212\260\067\034
\127\235\105\377\210\226\066\277\273\312\007\173\157\207\143\327
\320\062\152\326\135\154\014\361\263\156\071\342\153\061\056\071
\000\047\024\336\070\300\354\031\146\206\022\350\235\162\026\023
\144\122\307\251\067\034\375\202\060\355\204\030\035\364\256\134
\377\160\023\000\353\261\365\063\172\113\326\125\370\005\215\113
\151\260\365\263\050\066\134\024\304\121\163\115\153\013\361\064
\007\333\027\071\327\334\050\173\153\365\237\363\056\301\117\027
\052\020\363\314\312\350\353\375\153\253\056\232\237\055\202\156
\004\324\122\001\223\055\075\206\374\176\374\337\357\102\035\246
\153\357\271\040\306\367\275\240\247\225\375\247\346\211\044\330
\314\214\064\154\342\043\057\331\022\032\041\271\125\221\157\013
\221\171\031\014\255\100\210\013\160\342\172\322\016\330\150\110
\273\202\023\071\020\130\351\330\052\007\306\022\333\130\333\322
\073\125\020\107\005\025\147\142\176\030\143\246\106\077\011\016
\124\062\136\277\015\142\172\047\357\200\350\333\331\113\006\132
\067\132\045\320\010\022\167\324\157\011\120\227\075\310\035\303
\337\214\105\060\126\306\323\144\253\146\363\300\136\226\234\303
\304\357\303\174\153\213\072\171\177\263\111\317\075\342\211\237
\240\060\113\205\271\234\224\044\171\217\175\153\251\105\150\017
\053\320\361\332\034\313\151\270\312\111\142\155\310\320\143\142
\335\140\017\130\252\217\241\274\005\245\146\242\317\033\166\262
\204\144\261\114\071\122\300\060\272\360\214\113\002\260\266\267
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\107\270\315\377\345\157\356\370\262\354\057

\116\016\371\045\260\216\074\153\303\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\003\202\002\001\000\000\040\043
\101\065\004\220\302\100\142\140\357\342\065\114\327\077\254\342
\064\220\270\241\157\166\372\026\026\244\110\067\054\351\220\302
\362\074\370\012\237\330\201\345\273\133\332\045\054\244\247\125
\161\044\062\366\310\013\362\274\152\370\223\254\262\007\302\137
\237\333\314\310\212\252\276\152\157\341\111\020\314\061\327\200
\273\273\310\330\242\016\144\127\352\242\365\302\251\061\025\322
\040\152\354\374\042\001\050\317\206\270\200\036\251\314\021\245
\074\362\026\263\107\235\374\322\200\041\304\313\320\107\160\101
\241\312\203\031\010\054\155\362\135\167\234\212\024\023\324\066
\034\222\360\345\006\067\334\246\346\220\233\070\217\134\153\033
\106\206\103\102\137\076\001\007\123\124\135\145\175\367\212\163
\241\232\124\132\037\051\103\024\047\302\205\017\265\210\173\032
\073\224\267\035\140\247\265\234\347\051\151\127\132\233\223\172
\103\060\033\003\327\142\310\100\246\252\374\144\344\112\327\221
\123\001\250\040\210\156\234\137\104\271\313\140\201\064\354\157
\323\175\332\110\137\353\264\220\274\055\251\034\013\254\034\325
\242\150\040\200\004\326\374\261\217\057\273\112\061\015\112\206
\034\353\342\066\051\046\365\332\330\304\362\165\141\317\176\256
\166\143\112\172\100\145\223\207\370\036\200\214\206\345\206\326
\217\016\374\123\054\140\350\026\141\032\242\076\103\173\315\071
\140\124\152\365\362\211\046\001\150\203\110\242\063\350\311\004
\221\262\021\064\021\076\352\320\103\031\037\003\223\220\014\377
\121\075\127\364\101\156\341\313\240\276\353\311\143\315\155\314
\344\370\066\252\150\235\355\275\135\227\160\104\015\266\016\065
\334\341\014\135\273\240\121\224\313\176\026\353\021\057\243\222
\105\310\114\161\331\274\311\231\122\127\106\057\120\317\275\065
\151\364\075\025\316\006\245\054\017\076\366\201\272\224\273\303
\273\277\145\170\322\206\171\377\111\073\032\203\014\360\336\170
\354\310\362\115\114\032\336\202\051\370\301\132\332\355\356\346
\047\136\350\105\320\235\034\121\250\150\253\104\343\320\213\152
\343\370\073\273\334\115\327\144\362\121\276\346\252\253\132\351
\061\356\006\274\163\277\023\142\012\237\307\271\227

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Buypass Class 3 Root CA"

#

Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

Serial Number: 2 (0x2)

Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

Not Valid Before: Tue Oct 26 08:28:58 2010

Not Valid After : Fri Oct 26 08:28:58 2040

```

# Fingerprint (SHA-256):
ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D
# Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Buypass Class 3 Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\332\372\367\372\146\204\354\006\217\024\120\275\307\302\201\245
\274\251\144\127
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\075\073\030\236\054\144\132\350\325\210\316\016\371\067\302\354
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "T-TeleSec GlobalRoot Class 3"
#
# Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Serial Number: 1 (0x1)
# Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Not Valid Before: Wed Oct 01 10:29:56 2008
# Not Valid After : Sat Oct 01 23:59:59 2033
# Fingerprint (SHA-256):
FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD
# Fingerprint (SHA1):
55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164
\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123
\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035
\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060
\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145
\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141
\163\163\040\063\060\036\027\015\060\070\061\060\060\061\061\060
\062\071\065\066\132\027\015\063\063\061\060\060\061\062\063\065
\071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006
\023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124
\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162
\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142
\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171
```

\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164
\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124
\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157
\164\040\103\154\141\163\163\040\063\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\275\165\223\360\142\042
\157\044\256\340\172\166\254\175\275\331\044\325\270\267\374\315
\360\102\340\353\170\210\126\136\233\232\124\035\115\014\212\366
\323\317\160\364\122\265\330\223\004\343\106\206\161\101\112\053
\360\052\054\125\003\326\110\303\340\071\070\355\362\134\074\077
\104\274\223\075\141\253\116\315\015\276\360\040\047\130\016\104
\177\004\032\207\245\327\226\024\066\220\320\111\173\241\165\373
\032\153\163\261\370\316\251\011\054\362\123\325\303\024\104\270
\206\245\366\213\053\071\332\243\063\124\331\372\162\032\367\042
\025\034\210\221\153\177\146\345\303\152\200\260\044\363\337\206
\105\210\375\031\177\165\207\037\037\261\033\012\163\044\133\271
\145\340\054\124\310\140\323\146\027\077\341\314\124\063\163\221
\002\072\246\177\173\166\071\242\037\226\266\070\256\265\310\223
\164\035\236\271\264\345\140\235\057\126\321\340\353\136\133\114
\022\160\014\154\104\040\253\021\330\364\031\366\322\234\122\067
\347\372\266\302\061\073\112\324\024\231\255\307\032\365\135\137
\372\007\270\174\015\037\326\203\036\263\002\003\001\000\001\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\265
\003\367\166\073\141\202\152\022\252\030\123\353\003\041\224\277
\376\316\312\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\126\075\357\224\325\275\332\163\262
\130\276\256\220\255\230\047\227\376\001\261\260\122\000\270\115
\344\033\041\164\033\176\300\356\136\151\052\045\257\134\326\035
\332\322\171\311\363\227\051\340\206\207\336\004\131\017\361\131
\324\144\205\113\231\257\045\004\036\311\106\251\227\336\202\262
\033\160\237\234\366\257\161\061\335\173\005\245\054\323\271\312
\107\366\312\362\366\347\255\271\110\077\274\026\267\301\155\364
\352\011\257\354\363\265\347\005\236\246\036\212\123\121\326\223
\201\314\164\223\366\271\332\246\045\005\164\171\132\176\100\076
\202\113\046\021\060\156\341\077\101\307\107\000\065\325\365\323
\367\124\076\201\075\332\111\152\232\263\357\020\075\346\353\157
\321\310\042\107\313\314\317\001\061\222\331\030\343\042\276\011
\036\032\076\132\262\344\153\014\124\172\175\103\116\270\211\245
\173\327\242\075\226\206\314\362\046\064\055\152\222\235\232\032
\320\060\342\135\116\004\260\137\213\040\176\167\301\075\225\202
\321\106\232\073\074\170\270\157\241\320\015\144\242\170\036\051
\116\223\303\244\124\024\133

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "T-TeleSec GlobalRoot Class 3"

Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

Serial Number: 1 (0x1)

Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

Not Valid Before: Wed Oct 01 10:29:56 2008

Not Valid After : Sat Oct 01 23:59:59 2033

Fingerprint (SHA-256):

FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD

Fingerprint (SHA1): 55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\125\246\162\076\313\362\354\315\303\043\164\160\031\235\052\276
\021\343\201\321

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\312\373\100\250\116\071\222\212\035\376\216\057\304\047\352\357
END

CKA_ISSUER MULTILINE_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "D-TRUST Root Class 3 CA 2 2009"

#


```
# Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
# Serial Number: 623603 (0x983f3)
# Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
# Not Valid Before: Thu Nov 05 08:35:58 2009
# Not Valid After : Mon Nov 05 08:35:58 2029
# Fingerprint (SHA-256):
49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1
# Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\011\203\363
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\063\060\202\003\033\240\003\002\001\002\002\003\011
\203\363\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003
\014\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\154\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
\060\036\027\015\060\071\061\061\060\065\060\070\063\065\065\070
\132\027\015\062\071\061\061\060\065\060\070\063\065\065\070\132
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071\060
```

\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000
\323\262\112\317\172\107\357\165\233\043\372\072\057\326\120\105
\211\065\072\306\153\333\376\333\000\150\250\340\003\021\035\067
\120\010\237\115\112\150\224\065\263\123\321\224\143\247\040\126
\257\336\121\170\354\052\075\363\110\110\120\076\012\337\106\125
\213\047\155\303\020\115\015\221\122\103\330\207\340\135\116\066
\265\041\312\137\071\100\004\137\133\176\314\243\306\053\251\100
\036\331\066\204\326\110\363\222\036\064\106\040\044\301\244\121
\216\112\032\357\120\077\151\135\031\177\105\303\307\001\217\121
\311\043\350\162\256\264\274\126\011\177\022\313\034\261\257\051
\220\012\311\125\314\017\323\264\032\355\107\065\132\112\355\234
\163\004\041\320\252\275\014\023\265\000\312\046\154\304\153\014
\224\132\225\224\332\120\232\361\377\245\053\146\061\244\311\070
\240\337\035\037\270\011\056\363\247\350\147\122\253\225\037\340
\106\076\330\244\303\312\132\305\061\200\350\110\232\237\224\151
\376\031\335\330\163\174\201\312\226\336\216\355\263\062\005\145
\204\064\346\346\375\127\020\265\137\166\277\057\260\020\015\305
\002\003\001\000\001\243\202\001\032\060\202\001\026\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035
\006\003\125\035\016\004\026\004\024\375\332\024\304\237\060\336
\041\275\036\102\071\374\253\143\043\111\340\361\204\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\323
\006\003\125\035\037\004\201\313\060\201\310\060\201\200\240\176
\240\174\206\172\154\144\141\160\072\057\057\144\151\162\145\143
\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164
\057\103\116\075\104\055\124\122\125\123\124\045\062\060\122\157
\157\164\045\062\060\103\154\141\163\163\045\062\060\063\045\062
\060\103\101\045\062\060\062\045\062\060\062\060\060\071\054\117
\075\104\055\124\162\165\163\164\045\062\060\107\155\142\110\054
\103\075\104\105\077\143\145\162\164\151\146\151\143\141\164\145
\162\145\166\157\143\141\164\151\157\156\154\151\163\164\060\103
\240\101\240\077\206\075\150\164\164\160\072\057\057\167\167\167
\056\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154
\057\144\055\164\162\165\163\164\137\162\157\157\164\137\143\154
\141\163\163\137\063\137\143\141\137\062\137\062\060\060\071\056
\143\162\154\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\177\227\333\060\310\337\244\234\175
\041\172\200\160\316\024\022\151\210\024\225\140\104\001\254\262
\351\060\117\233\120\302\146\330\176\215\060\265\160\061\351\342
\151\307\363\160\333\040\025\206\320\015\360\276\254\001\165\204
\316\176\237\115\277\267\140\073\234\363\312\035\342\136\150\330
\243\235\227\345\100\140\322\066\041\376\320\264\270\027\332\164
\243\177\324\337\260\230\002\254\157\153\153\054\045\044\162\241
\145\356\045\132\345\346\062\347\362\337\253\111\372\363\220\151
\043\333\004\331\347\134\130\374\145\324\227\276\314\374\056\012
\314\045\052\065\004\370\140\221\025\165\075\101\377\043\037\031
\310\154\353\202\123\004\246\344\114\042\115\215\214\272\316\133

```
\163\354\144\124\120\155\321\234\125\373\151\303\066\303\214\274
\074\205\246\153\012\046\015\340\223\230\140\256\176\306\044\227
\212\141\137\221\216\146\222\011\207\066\315\213\233\055\076\366
\121\324\120\324\131\050\275\203\362\314\050\173\123\206\155\330
\046\210\160\327\352\221\315\076\271\312\300\220\156\132\306\136
\164\145\327\134\376\243\342
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "D-TRUST Root Class 3 CA 2 2009"

Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE

Serial Number: 623603 (0x983f3)

Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE

Not Valid Before: Thu Nov 05 08:35:58 2009

Not Valid After : Mon Nov 05 08:35:58 2029

Fingerprint (SHA-256):

49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1

Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\130\350\253\260\066\025\063\373\200\367\233\033\155\051\323\377
\215\137\000\360
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\315\340\045\151\215\107\254\234\211\065\220\367\375\121\075\057
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\003\011\203\363
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED

CK_BBOOL CK_FALSE

#

Certificate "D-TRUST Root Class 3 CA 2 EV 2009"

#

Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

Serial Number: 623604 (0x983f4)

Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

Not Valid Before: Thu Nov 05 08:50:46 2009

Not Valid After : Mon Nov 05 08:50:46 2029

Fingerprint (SHA-256):

EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81

Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
\060\071

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
\060\071

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\011\203\364

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\103\060\202\003\053\240\003\002\001\002\002\003\011
\203\364\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003
\014\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\154\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062

\060\060\071\060\036\027\015\060\071\061\061\060\065\060\070\065
\060\064\066\132\027\015\062\071\061\061\060\065\060\070\065\060
\064\066\132\060\120\061\013\060\011\006\003\125\004\006\023\002
\104\105\061\025\060\023\006\003\125\004\012\014\014\104\055\124
\162\165\163\164\040\107\155\142\110\061\052\060\050\006\003\125
\004\003\014\041\104\055\124\122\125\123\124\040\122\157\157\164
\040\103\154\141\163\163\040\063\040\103\101\040\062\040\105\126
\040\062\060\060\071\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\231\361\204\064\160\272\057\267\060\240
\216\275\174\004\317\276\142\274\231\375\202\227\322\172\012\147
\226\070\011\366\020\116\225\042\163\231\215\332\025\055\347\005
\374\031\163\042\267\216\230\000\274\074\075\254\241\154\373\326
\171\045\113\255\360\314\144\332\210\076\051\270\017\011\323\064
\335\063\365\142\321\341\315\031\351\356\030\117\114\130\256\342
\036\326\014\133\025\132\330\072\270\304\030\144\036\343\063\262
\265\211\167\116\014\277\331\224\153\023\227\157\022\243\376\231
\251\004\314\025\354\140\150\066\355\010\173\267\365\277\223\355
\146\061\203\214\306\161\064\207\116\027\352\257\213\221\215\034
\126\101\256\042\067\136\067\362\035\331\321\055\015\057\151\121
\247\276\146\246\212\072\052\275\307\032\261\341\024\360\276\072
\035\271\317\133\261\152\376\264\261\106\040\242\373\036\073\160
\357\223\230\175\214\163\226\362\305\357\205\160\255\051\046\374
\036\004\076\034\240\330\017\313\122\203\142\174\356\213\123\225
\220\251\127\242\352\141\005\330\371\115\304\047\372\156\255\355
\371\327\121\367\153\245\002\003\001\000\001\243\202\001\044\060
\202\001\040\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\323
\224\212\114\142\023\052\031\056\314\257\162\212\175\066\327\232
\034\334\147\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\201\335\006\003\125\035\037\004\201\325\060\201
\322\060\201\207\240\201\204\240\201\201\206\177\154\144\141\160
\072\057\057\144\151\162\145\143\164\157\162\171\056\144\055\164
\162\165\163\164\056\156\145\164\057\103\116\075\104\055\124\122
\125\123\124\045\062\060\122\157\157\164\045\062\060\103\154\141
\163\163\045\062\060\063\045\062\060\103\101\045\062\060\062\045
\062\060\105\126\045\062\060\062\060\060\071\054\117\075\104\055
\124\162\165\163\164\045\062\060\107\155\142\110\054\103\075\104
\105\077\143\145\162\164\151\146\151\143\141\164\145\162\145\166
\157\143\141\164\151\157\156\154\151\163\164\060\106\240\104\240
\102\206\100\150\164\164\160\072\057\057\167\167\167\056\144\055
\164\162\165\163\164\056\156\145\164\057\143\162\154\057\144\055
\164\162\165\163\164\137\162\157\157\164\137\143\154\141\163\163
\137\063\137\143\141\137\062\137\145\166\137\062\060\060\071\056
\143\162\154\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\064\355\173\132\074\244\224\210\357
\032\021\165\007\057\263\376\074\372\036\121\046\353\207\366\051
\336\340\361\324\306\044\011\351\301\317\125\033\264\060\331\316

```
\032\376\006\121\246\025\244\055\357\262\113\277\040\050\045\111
\321\246\066\167\064\350\144\337\122\261\021\307\163\172\315\071
\236\302\255\214\161\041\362\132\153\257\337\074\116\125\257\262
\204\145\024\211\271\167\313\052\061\276\317\243\155\317\157\110
\224\062\106\157\347\161\214\240\246\204\031\067\007\362\003\105
\011\053\206\165\174\337\137\151\127\000\333\156\330\246\162\042
\113\120\324\165\230\126\337\267\030\377\103\103\120\256\172\104
\173\360\171\121\327\103\075\247\323\201\323\360\311\117\271\332
\306\227\206\320\202\303\344\102\155\376\260\342\144\116\016\046
\347\100\064\046\265\010\211\327\010\143\143\070\047\165\036\063
\352\156\250\335\237\231\117\164\115\201\211\200\113\335\232\227
\051\134\057\276\201\101\271\214\377\352\175\140\006\236\315\327
\075\323\056\243\025\274\250\346\046\345\157\303\334\270\003\041
\352\237\026\361\054\124\265
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "D-TRUST Root Class 3 CA 2 EV 2009"

Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

Serial Number: 623604 (0x983f4)

Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE

Not Valid Before: Thu Nov 05 08:50:46 2009

Not Valid After : Mon Nov 05 08:50:46 2029

Fingerprint (SHA-256):

EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81

Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\226\311\033\013\225\264\020\230\102\372\320\330\042\171\376\140
\372\271\026\203
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\252\306\103\054\136\055\315\304\064\300\120\117\021\002\117\266
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
```

```

\060\071
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\011\203\364
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "CA Disig Root R2"
#
# Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Serial Number:00:92:b8:88:db:b0:8a:c1:63
# Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Not Valid Before: Thu
# Jul 19 09:15:30 2012
# Not Valid After : Sat Jul 19 09:15:30 2042
# Fingerprint (SHA-256):
E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03
# Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\222\270\210\333\260\212\301\143

```

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\151\060\202\003\121\240\003\002\001\002\002\011\000
\222\270\210\333\260\212\301\143\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\122\061\013\060\011\006\003\125
\004\006\023\002\123\113\061\023\060\021\006\003\125\004\007\023
\012\102\162\141\164\151\163\154\141\166\141\061\023\060\021\006
\003\125\004\012\023\012\104\151\163\151\147\040\141\056\163\056
\061\031\060\027\006\003\125\004\003\023\020\103\101\040\104\151
\163\151\147\040\122\157\157\164\040\122\062\060\036\027\015\061
\062\060\067\061\071\060\071\061\065\063\060\132\027\015\064\062
\060\067\061\071\060\071\061\065\063\060\132\060\122\061\013\060
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040
\141\056\163\056\061\031\060\027\006\003\125\004\003\023\020\103
\101\040\104\151\163\151\147\040\122\157\157\164\040\122\062\060
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000
\242\243\304\000\011\326\205\135\055\155\024\366\302\303\163\236
\065\302\161\125\176\201\373\253\106\120\340\301\174\111\170\346
\253\171\130\074\332\377\174\034\237\330\227\002\170\076\153\101
\004\351\101\275\276\003\054\105\366\057\144\324\253\135\243\107
\075\144\233\351\150\232\306\314\033\077\272\276\262\213\064\002
\056\230\125\031\374\214\157\252\137\332\114\316\115\003\041\243
\330\322\064\223\126\226\313\114\014\000\026\074\137\032\315\310
\307\154\246\255\323\061\247\274\350\345\341\146\326\322\373\003
\264\101\145\311\020\256\016\005\143\306\200\152\151\060\375\322
\356\220\357\015\047\337\237\225\163\364\341\045\332\154\026\336
\101\070\064\352\213\374\321\350\004\024\141\055\101\176\254\307
\167\116\313\121\124\373\136\222\030\033\004\132\150\306\311\304
\372\267\023\240\230\267\021\053\267\326\127\314\174\236\027\321
\313\045\376\206\116\044\056\126\014\170\115\236\001\022\246\053
\247\001\145\156\174\142\035\204\204\337\352\300\153\265\245\052
\225\203\303\123\021\014\163\035\013\262\106\220\321\102\072\316
\100\156\225\255\377\306\224\255\156\227\204\216\175\157\236\212
\200\015\111\155\163\342\173\222\036\303\363\301\363\353\056\005
\157\331\033\317\067\166\004\310\264\132\344\027\247\313\335\166
\037\320\031\166\350\054\005\263\326\234\064\330\226\334\141\207
\221\005\344\104\010\063\301\332\271\010\145\324\256\262\066\015
\353\272\070\272\014\345\233\236\353\215\146\335\231\317\326\211
\101\366\004\222\212\051\051\155\153\072\034\347\165\175\002\161
\016\363\300\347\275\313\031\335\235\140\262\302\146\140\266\261
\004\356\311\346\206\271\232\146\100\250\347\021\355\201\105\003
\213\366\147\131\350\301\006\021\275\335\317\200\002\117\145\100
\170\134\107\120\310\233\346\037\201\173\344\104\250\133\205\232
\342\336\132\325\307\371\072\104\146\113\344\062\124\174\344\154
\234\263\016\075\027\242\262\064\022\326\176\262\250\111\273\321

\172\050\100\276\242\026\037\337\344\067\037\021\163\373\220\012
\145\103\242\015\174\370\006\001\125\063\175\260\015\270\364\365
\256\245\102\127\174\066\021\214\173\136\304\003\235\214\171\235
\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035
\016\004\026\004\024\265\231\370\257\260\224\365\343\040\326\012
\255\316\116\126\244\056\156\102\355\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\003\202\002\001\000\046\006\136
\160\347\145\063\310\202\156\331\234\027\072\033\172\146\262\001
\366\170\073\151\136\057\352\377\116\371\050\303\230\052\141\114
\264\044\022\212\175\155\021\024\367\234\265\312\346\274\236\047
\216\114\031\310\251\275\172\300\327\066\016\155\205\162\156\250
\306\242\155\366\372\163\143\177\274\156\171\010\034\235\212\237
\032\212\123\246\330\273\331\065\125\261\021\305\251\003\263\126
\073\271\204\223\042\136\176\301\366\022\122\213\352\054\147\274
\376\066\114\365\270\317\321\263\111\222\073\323\051\016\231\033
\226\367\141\270\073\304\053\266\170\154\264\043\157\360\375\323
\262\136\165\037\231\225\250\254\366\332\341\305\061\173\373\321
\106\263\322\274\147\264\142\124\272\011\367\143\260\223\242\232
\371\351\122\056\213\140\022\253\374\365\140\126\357\020\134\213
\304\032\102\334\203\133\144\016\313\265\274\326\117\301\174\074
\156\215\023\155\373\173\353\060\320\334\115\257\305\325\266\245
\114\133\161\311\350\061\276\350\070\006\110\241\032\342\352\322
\336\022\071\130\032\377\200\016\202\165\346\267\311\007\154\016
\357\377\070\361\230\161\304\267\177\016\025\320\045\151\275\042
\235\053\355\005\366\106\107\254\355\300\360\324\073\342\354\356
\226\133\220\023\116\036\126\072\353\260\357\226\273\226\043\021
\272\362\103\206\164\144\225\310\050\165\337\035\065\272\322\067
\203\070\123\070\066\073\317\154\351\371\153\016\320\373\004\350
\117\167\327\145\001\170\206\014\172\076\041\142\361\177\143\161
\014\311\237\104\333\250\047\242\165\276\156\201\076\327\300\353
\033\230\017\160\134\064\262\212\314\300\205\030\353\156\172\263
\367\132\241\007\277\251\102\222\363\140\042\227\344\024\241\007
\233\116\166\300\216\175\375\244\045\307\107\355\377\037\163\254
\314\303\245\351\157\012\216\233\145\302\120\205\265\243\240\123
\022\314\125\207\141\363\201\256\020\106\141\275\104\041\270\302
\075\164\317\176\044\065\372\034\007\016\233\075\042\312\357\061
\057\214\254\022\275\357\100\050\374\051\147\237\262\023\117\146
\044\304\123\031\351\036\051\025\357\346\155\260\177\055\147\375
\363\154\033\165\106\243\345\112\027\351\244\327\013

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "CA Disig Root R2"

```
# Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Serial Number:00:92:b8:88:db:b0:8a:c1:63
# Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Not Valid Before: Thu Jul 19 09:15:30 2012
# Not Valid After : Sat Jul 19 09:15:30 2042
# Fingerprint (SHA-256):
E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03
# Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA Disig Root R2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\265\141\353\352\244\336\344\045\113\151\032\230\245\127\107\302
\064\307\331\161
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\001\373\330\047\247\027\232\105\124\070\032\103\001\073\003
END
CKA_ISSUER
MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125
\004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157
\164\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\222\270\210\333\260\212\301\143
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ACCVRAIZ1"
#
# Issuer: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
# Serial Number:5e:c3:b7:a6:43:7f:a4:e0
# Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1
# Not Valid Before: Thu May 05 09:37:37 2011
# Not Valid After : Tue Dec 31 09:37:37 2030
# Fingerprint (SHA-256):
9A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13
#
```

Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACCVRAIZ1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006
\023\002\105\123
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006
\023\002\105\123
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\136\303\267\246\103\177\244\340
END
CKA_VALUE MULTILINE_OCTAL
\060\202\007\323\060\202\005\273\240\003\002\001\002\002\010\136
\303\267\246\103\177\244\340\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\102\061\022\060\020\006\003\125\004
\003\014\011\101\103\103\126\122\101\111\132\061\061\020\060\016
\006\003\125\004\013\014\007\120\113\111\101\103\103\126\061\015
\060\013\006\003\125\004\012\014\004\101\103\103\126\061\013\060
\011\006\003\125\004\006\023\002\105\123\060\036\027\015\061\061
\060\065\060\065\060\071\063\067\063\067\132\027\015\063\060\061
\062\063\061\060\071\063\067\063\067\132\060\102\061\022\060\020
\006\003\125\004\003\014\011\101\103\103\126\122\101\111\132\061
\061\020\060\016\006\003\125\004\013\014\007\120\113\111\101\103
\103\126\061\015\060\013\006\003\125\004\012\014\004\101\103\103
\126\061\013\060\011\006\003\125\004\006\023\002\105\123\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\233
\251\253\277\141\112\227\257\057\227\146\232\164\137\320\331\226
\375\317\342\344\146\357\037\037\107\063\302\104\243\337\232\336
\037\265\124\335\025\174\151\065\021\157\273\310\014\216\152\030
\036\330\217\331\026\274\020\110\066\134\360\143\263\220\132\134
\044\067\327\243\326\313\011\161\271\361\001\162\204\260\175\333
\115\200\315\374\323\157\311\370\332\266\016\202\322\105\205\250
```

\033\150\250\075\350\364\104\154\275\241\302\313\003\276\214\076
\023\000\204\337\112\110\300\343\042\012\350\351\067\247\030\114
\261\011\015\043\126\177\004\115\331\027\204\030\245\310\332\100
\224\163\353\316\016\127\074\003\201\072\235\012\241\127\103\151
\254\127\155\171\220\170\345\265\264\073\330\274\114\215\050\241
\247\243\247\272\002\116\045\321\052\256\355\256\003\042\270\153
\040\017\060\050\124\225\177\340\356\316\012\146\235\321\100\055
\156\042\257\235\032\301\005\031\322\157\300\362\237\370\173\263
\002\102\373\120\251\035\055\223\017\043\253\306\301\017\222\377
\320\242\025\365\123\011\161\034\377\105\023\204\346\046\136\370
\340\210\034\012\374\026\266\250\163\006\270\360\143\204\002\240
\306\132\354\347\164\337\160\256\243\203\045\352\326\307\227\207
\223\247\306\212\212\063\227\140\067\020\076\227\076\156\051\025
\326\241\017\321\210\054\022\237\157\252\244\306\102\353\101\242
\343\225\103\323\001\205\155\216\273\073\363\043\066\307\376\073
\340\241\045\007\110\253\311\211\164\377\010\217\200\277\300\226
\145\363\356\354\113\150\275\235\210\303\061\263\100\361\350\317
\366\070\273\234\344\321\177\324\345\130\233\174\372\324\363\016
\233\165\221\344\272\122\056\031\176\321\365\315\132\031\374\272
\006\366\373\122\250\113\231\004\335\370\371\264\213\120\243\116
\142\211\360\207\044\372\203\102\301\207\372\325\055\051\052\132
\161\172\144\152\327\047\140\143\015\333\316\111\365\215\037\220
\211\062\027\370\163\103\270\322\132\223\206\141\326\341\165\012
\352\171\146\166\210\117\161\353\004\045\326\012\132\172\223\345
\271\113\027\100\017\261\266\271\365\336\117\334\340\263\254\073
\021\160\140\204\112\103\156\231\040\300\051\161\012\300\145\002
\003\001\000\001\243\202\002\313\060\202\002\307\060\175\006\010
\053\006\001\005\005\007\001\001\004\161\060\157\060\114\006\010
\053\006\001\005\005\007\060\002\206\100\150\164\164\160\072\057
\057\167\167\167\056\141\143\143\166\056\145\163\057\146\151\154
\145\141\144\155\151\156\057\101\162\143\150\151\166\157\163\057
\143\145\162\164\151\146\151\143\141\144\157\163\057\162\141\151
\172\141\143\143\166\061\056\143\162\164\060\037\006\010\053\006
\001\005\005\007\060\001\206\023\150\164\164\160\072\057\057\157
\143\163\160\056\141\143\143\166\056\145\163\060\035\006\003\125
\035\016\004\026\004\024\322\207\264\343\337\067\047\223\125\366
\126\352\201\345\066\314\214\036\077\275\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125
\035\043\004\030\060\026\200\024\322\207\264\343\337\067\047\223
\125\366\126\352\201\345\066\314\214\036\077\275\060\202\001\163
\006\003\125\035\040\004\202\001\152\060\202\001\146\060\202\001
\142\006\004\125\035\040\000\060\202\001\130\060\202\001\042\006
\010\053\006\001\005\005\007\002\002\060\202\001\024\036\202\001
\020\000\101\000\165\000\164\000\157\000\162\000\151\000\144\000
\141\000\144\000\040\000\144\000\145\000\040\000\103\000\145\000
\162\000\164\000\151\000\146\000\151\000\143\000\141\000\143\000
\151\000\363\000\156\000\040\000\122\000\141\000\355\000\172\000
\040\000\144\000\145\000\040\000\154\000\141\000\040\000\101\000

\103\000\103\000\126\000\040\000\050\000\101\000\147\000\145\000
\156\000\143\000\151\000\141\000\040\000\144\000\145\000\040\000
\124\000\145\000\143\000\156\000\157\000\154\000\157\000\147\000
\355\000\141\000\040\000\171\000\040\000\103\000\145\000\162\000
\164\000\151\000\146\000\151\000\143\000\141\000\143\000\151\000
\363\000\156\000\040\000\105\000\154\000\145\000\143\000\164\000
\162\000\363\000\156\000\151\000\143\000\141\000\054\000\040\000
\103\000\111\000\106\000\040\000\121\000\064\000\066\000\060\000
\061\000\061\000\065\000\066\000\105\000\051\000\056\000\040\000
\103\000\120\000\123\000\040\000\145\000\156\000\040\000\150\000
\164\000\164\000\160\000\072\000\057\000\057\000\167\000\167\000
\167\000\056\000\141\000\143\000\143\000\166\000\056\000\145\000
\163\060\060\006\010\053\006\001\005\005\007\002\001\026\044\150
\164\164\160\072\057\057\167\167\167\056\141\143\143\166\056\145
\163\057\154\145\147\151\163\154\141\143\151\157\156\137\143\056
\150\164\155\060\125\006\003\125\035\037\004\116\060\114\060\112
\240\110\240\106\206\104\150\164\164\160\072\057\057\167\167\167
\056\141\143\143\166\056\145\163\057\146\151\154\145\141\144\155
\151\156\057\101\162\143\150\151\166\157\163\057\143\145\162\164
\151\146\151\143\141\144\157\163\057\162\141\151\172\141\143\143
\166\061\137\144\145\162\056\143\162\154\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\027\006\003\125\035
\021\004\020\060\016\201\014\141\143\143\166\100\141\143\143\166
\056\145\163\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\003\202\002\001\000\227\061\002\237\347\375\103\147\110
\104\024\344\051\207\355\114\050\146\320\217\065\332\115\141\267
\112\227\115\265\333\220\340\005\056\016\306\171\320\362\227\151
\017\275\004\107\331\276\333\265\051\332\233\331\256\251\231\325
\323\074\060\223\365\215\241\250\374\006\215\104\364\312\026\225
\174\063\334\142\213\250\067\370\047\330\011\055\033\357\310\024
\047\040\251\144\104\377\056\326\165\252\154\115\140\100\031\111
\103\124\143\332\342\314\272\146\345\117\104\172\133\331\152\201
\053\100\325\177\371\001\047\130\054\310\355\110\221\174\077\246
\000\317\304\051\163\021\066\336\206\031\076\235\356\031\212\033
\325\260\355\216\075\234\052\300\015\330\075\146\343\074\015\275
\325\224\134\342\342\247\065\033\004\000\366\077\132\215\352\103
\275\137\211\035\251\301\260\314\231\342\115\000\012\332\311\047
\133\347\023\220\134\344\365\063\242\125\155\334\340\011\115\057
\261\046\133\047\165\000\011\304\142\167\051\010\137\236\131\254
\266\176\255\237\124\060\042\003\301\036\161\144\376\371\070\012
\226\030\335\002\024\254\043\313\006\034\036\244\175\215\015\336
\047\101\350\255\332\025\267\260\043\335\053\250\323\332\045\207
\355\350\125\104\115\210\364\066\176\204\232\170\254\367\016\126
\111\016\326\063\045\326\204\120\102\154\040\022\035\052\325\276
\274\362\160\201\244\160\140\276\005\265\233\236\004\104\276\141
\043\254\351\245\044\214\021\200\224\132\242\242\271\111\322\301
\334\321\247\355\061\021\054\236\031\246\356\341\125\341\300\352
\317\015\204\344\027\267\242\174\245\336\125\045\006\356\314\300

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\207\134\100\332\314\225\077\125\340\065\307\270\204\276\264\135
\315\172\203\001\162\356\207\346\137\035\256\265\205\306\046\337
\346\301\232\351\036\002\107\237\052\250\155\251\133\317\354\105
\167\177\230\047\232\062\135\052\343\204\356\305\230\146\057\226
\040\035\335\330\303\047\327\260\371\376\331\175\315\320\237\217
\013\024\130\121\237\057\213\303\070\055\336\350\217\326\215\207
\244\365\126\103\026\231\054\364\244\126\264\064\270\141\067\311
\302\130\200\033\240\227\241\374\131\215\351\021\366\321\017\113
\125\064\106\052\213\206\073
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "ACCVRAIZ1"

Issuer: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1

Serial Number:5e:c3:b7:a6:43:7f:a4:e0

Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1

Not Valid Before: Thu May 05 09:37:37 2011

Not Valid After : Tue Dec 31 09:37:37 2030

Fingerprint (SHA-256):

9A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13

Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8

"ACCVRAIZ1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\223\005\172\210\025\306\117\316\210\057\372\221\026\122\050\170
\274\123\144\027
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\320\240\132\356\005\266\011\224\041\241\175\361\262\051\202\002
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103
\126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014
\007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004
\012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006
\023\002\105\123
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END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\010\136\303\267\246\103\177\244\340
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "TWCA Global Root CA"

#

Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

Serial Number: 3262 (0xcbe)

Subject: CN=TWCA Global

Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

Not Valid Before: Wed Jun 27 06:28:33 2012

Not Valid After : Tue Dec 31 15:59:59 2030

Fingerprint (SHA-256):

59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B

Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TWCA Global Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\002\014\276

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\101\060\202\003\051\240\003\002\001\002\002\002\014
\276\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116

\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101\060\036\027\015\061\062\060\066\062\067\060\066\062
\070\063\063\132\027\015\063\060\061\062\063\061\061\065\065\071
\065\071\132\060\121\061\013\060\011\006\003\125\004\006\023\002
\124\127\061\022\060\020\006\003\125\004\012\023\011\124\101\111
\127\101\116\055\103\101\061\020\060\016\006\003\125\004\013\023
\007\122\157\157\164\040\103\101\061\034\060\032\006\003\125\004
\003\023\023\124\127\103\101\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\260\005\333\310\353\214\304\156\212
\041\357\216\115\234\161\012\037\122\160\355\155\202\234\227\305
\327\114\116\105\111\313\100\102\265\022\064\154\031\302\164\244
\061\137\205\002\227\354\103\063\012\123\322\234\214\216\267\270
\171\333\053\325\152\362\216\146\304\356\053\001\007\222\324\263
\320\002\337\120\366\125\257\146\016\313\340\107\140\057\053\062
\071\065\122\072\050\203\370\173\026\306\030\270\142\326\107\045
\221\316\360\031\022\115\255\143\365\323\077\165\137\051\360\241
\060\034\052\240\230\246\025\275\356\375\031\066\360\342\221\103
\217\372\312\326\020\047\111\114\357\335\301\361\205\160\233\312
\352\250\132\103\374\155\206\157\163\351\067\105\251\360\066\307
\314\210\165\036\273\154\006\377\233\153\076\027\354\141\252\161
\174\306\035\242\367\111\351\025\265\074\326\241\141\365\021\367
\005\157\035\375\021\276\320\060\007\302\051\260\011\116\046\334
\343\242\250\221\152\037\302\221\105\210\134\345\230\270\161\245
\025\031\311\174\165\021\314\160\164\117\055\233\035\221\104\375
\126\050\240\376\273\206\152\310\372\134\013\130\334\306\113\166
\310\253\042\331\163\017\245\364\132\002\211\077\117\236\042\202
\356\242\164\123\052\075\123\047\151\035\154\216\062\054\144\000
\046\143\141\066\116\243\106\267\077\175\263\055\254\155\220\242
\225\242\316\317\332\202\347\007\064\031\226\351\270\041\252\051
\176\246\070\276\216\051\112\041\146\171\037\263\303\265\011\147
\336\326\324\007\106\363\052\332\346\042\067\140\313\201\266\017
\240\017\351\310\225\177\277\125\221\005\172\317\075\025\300\157
\336\011\224\001\203\327\064\033\314\100\245\360\270\233\147\325
\230\221\073\247\204\170\225\046\244\132\010\370\053\164\264\000
\004\074\337\270\024\216\350\337\251\215\154\147\222\063\035\300
\267\322\354\222\310\276\011\277\054\051\005\157\002\153\236\357
\274\277\052\274\133\300\120\217\101\160\161\207\262\115\267\004
\251\204\243\062\257\256\356\153\027\213\262\261\376\154\341\220
\214\210\250\227\110\316\310\115\313\363\006\317\137\152\012\102
\261\036\036\167\057\216\240\346\222\016\006\374\005\042\322\046
\341\061\121\175\062\334\017\002\003\001\000\001\243\043\060\041
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000

\003\202\002\001\000\137\064\201\166\357\226\035\325\345\265\331
\002\143\204\026\301\256\240\160\121\247\367\114\107\065\310\013
\327\050\075\211\161\331\252\063\101\352\024\033\154\041\000\300
\154\102\031\176\237\151\133\040\102\337\242\322\332\304\174\227
\113\215\260\350\254\310\356\245\151\004\231\012\222\246\253\047
\056\032\115\201\277\204\324\160\036\255\107\376\375\112\235\063
\340\362\271\304\105\010\041\012\332\151\151\163\162\015\276\064
\376\224\213\255\303\036\065\327\242\203\357\345\070\307\245\205
\037\253\317\064\354\077\050\376\014\361\127\206\116\311\125\367
\034\324\330\245\175\006\172\157\325\337\020\337\201\116\041\145
\261\266\341\027\171\225\105\006\316\137\314\334\106\211\143\150
\104\215\223\364\144\160\240\075\235\050\005\303\071\160\270\142
\173\040\375\344\333\351\010\241\270\236\075\011\307\117\373\054
\370\223\166\101\336\122\340\341\127\322\235\003\274\167\236\376
\236\051\136\367\301\121\140\037\336\332\013\262\055\165\267\103
\110\223\347\366\171\306\204\135\200\131\140\224\374\170\230\217
\074\223\121\355\100\220\007\337\144\143\044\313\116\161\005\241
\327\224\032\210\062\361\042\164\042\256\245\246\330\022\151\114
\140\243\002\356\053\354\324\143\222\013\136\276\057\166\153\243
\266\046\274\217\003\330\012\362\114\144\106\275\071\142\345\226
\353\064\143\021\050\314\225\361\255\357\357\334\200\130\110\351
\113\270\352\145\254\351\374\200\265\265\310\105\371\254\301\237
\331\271\352\142\210\216\304\361\113\203\022\255\346\213\204\326
\236\302\353\203\030\237\152\273\033\044\140\063\160\314\354\367
\062\363\134\331\171\175\357\236\244\376\311\043\303\044\356\025
\222\261\075\221\117\046\206\275\146\163\044\023\352\244\256\143
\301\255\175\204\003\074\020\170\206\033\171\343\304\363\362\004
\225\040\256\043\202\304\263\072\000\142\277\346\066\044\341\127
\272\307\036\220\165\325\137\077\225\141\053\301\073\315\345\263
\150\141\320\106\046\251\041\122\151\055\353\056\307\353\167\316
\246\072\265\003\063\117\166\321\347\134\124\001\135\313\170\364
\311\014\277\317\022\216\027\055\043\150\224\347\253\376\251\262
\053\006\320\004\315

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL

CK_FALSE

Trust for "TWCA Global Root CA"

Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

Serial Number: 3262 (0xcbe)

Subject: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

Not Valid Before: Wed Jun 27 06:28:33 2012

Not Valid After : Tue Dec 31 15:59:59 2030

Fingerprint (SHA-256):

59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B

```

# Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TWCA Global Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\234\273\110\123\366\244\366\323\122\244\350\062\122\125\140\023
\365\255\257\145
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\371\003\176\317\346\236\074\163\172\052\220\007\151\377\053\226
END
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157
\157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023
\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\014\276
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TeliaSonera Root CA v1"
#
# Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera
# Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96
# Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera
# Not Valid Before: Thu Oct 18 12:00:50 2007
# Not Valid After : Mon Oct 18 12:00:50 2032
# Fingerprint (SHA-256):
DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89
# Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TeliaSonera Root CA v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA_SUBJECT MULTILINE_OCTAL

\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372
\213\315\226

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\070\060\202\003\040\240\003\002\001\002\002\021\000
\225\276\026\240\367\056\106\361\173\071\202\162\372\213\315\226
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154\151
\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004\003
\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122\157
\157\164\040\103\101\040\166\061\060\036\027\015\060\067\061\060
\061\070\061\062\060\060\065\060\132\027\015\063\062\061\060\061
\070\061\062\060\060\065\060\132\060\067\061\024\060\022\006\003
\125\004\012\014\013\124\145\154\151\141\123\157\156\145\162\141
\061\037\060\035\006\003\125\004\003\014\026\124\145\154\151\141
\123\157\156\145\162\141\040\122\157\157\164\040\103\101\040\166
\061\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\302\276\353\047\360\041\243\363\151\046\125\176\235\305
\125\026\221\134\375\357\041\277\123\200\172\055\322\221\214\143
\061\360\354\044\360\303\245\322\162\174\020\155\364\067\267\345
\346\174\171\352\214\265\202\213\256\110\266\254\000\334\145\165
\354\052\115\137\301\207\365\040\145\053\201\250\107\076\211\043
\225\060\026\220\177\350\127\007\110\347\031\256\277\105\147\261
\067\033\006\052\376\336\371\254\175\203\373\136\272\344\217\227
\147\276\113\216\215\144\007\127\070\125\151\064\066\075\023\110
\357\117\342\323\146\036\244\317\032\267\136\066\063\324\264\006
\275\030\001\375\167\204\120\000\105\365\214\135\350\043\274\176
\376\065\341\355\120\173\251\060\215\031\323\011\216\150\147\135
\277\074\227\030\123\273\051\142\305\312\136\162\301\307\226\324
\333\055\240\264\037\151\003\354\352\342\120\361\014\074\360\254
\363\123\055\360\034\365\355\154\071\071\163\200\026\310\122\260
\043\315\340\076\334\335\074\107\240\273\065\212\342\230\150\213
\276\345\277\162\356\322\372\245\355\022\355\374\230\030\251\046

\166\334\050\113\020\040\034\323\177\026\167\055\355\157\200\367
\111\273\123\005\273\135\150\307\324\310\165\026\077\211\132\213
\367\027\107\324\114\361\322\211\171\076\115\075\230\250\141\336
\072\036\322\370\136\003\340\301\311\034\214\323\215\115\323\225
\066\263\067\137\143\143\233\063\024\360\055\046\153\123\174\211
\214\062\302\156\354\075\041\000\071\311\241\150\342\120\203\056
\260\072\053\363\066\240\254\057\344\157\141\302\121\011\071\076
\213\123\271\273\147\332\334\123\271\166\131\066\235\103\345\040
\340\075\062\140\205\042\121\267\307\063\273\335\025\057\244\170
\246\007\173\201\106\066\004\206\335\171\065\307\225\054\073\260
\243\027\065\345\163\037\264\134\131\357\332\352\020\145\173\172
\320\177\237\263\264\052\067\073\160\213\233\133\271\053\267\354
\262\121\022\227\123\051\132\324\360\022\020\334\117\002\273\022
\222\057\142\324\077\151\103\174\015\326\374\130\165\001\210\235
\130\026\113\336\272\220\377\107\001\211\006\152\366\137\262\220
\152\263\002\246\002\210\277\263\107\176\052\331\325\372\150\170
\065\115\002\003\001\000\001\243\077\060\075\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003
\125\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016
\004\026\004\024\360\217\131\070\000\263\365\217\232\226\014\325
\353\372\173\252\027\350\023\022\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\002\001\000\276\344\134\142
\116\044\364\014\010\377\360\323\014\150\344\223\111\042\077\104
\047\157\273\155\336\203\146\316\250\314\015\374\365\232\006\345
\167\024\221\353\235\101\173\231\052\204\345\377\374\041\301\135
\360\344\037\127\267\165\251\241\137\002\046\377\327\307\367\116
\336\117\370\367\034\106\300\172\117\100\054\042\065\360\031\261
\320\153\147\054\260\250\340\300\100\067\065\366\204\134\134\343
\257\102\170\376\247\311\015\120\352\015\204\166\366\121\357\203
\123\306\172\377\016\126\111\056\217\172\326\014\346\047\124\343
\115\012\140\162\142\315\221\007\326\245\277\310\231\153\355\304
\031\346\253\114\021\070\305\157\061\342\156\111\310\077\166\200
\046\003\046\051\340\066\366\366\040\123\343\027\160\064\027\235
\143\150\036\153\354\303\115\206\270\023\060\057\135\106\015\107
\103\325\033\252\131\016\271\134\215\006\110\255\164\207\137\307
\374\061\124\101\023\342\307\041\016\236\340\036\015\341\300\173
\103\205\220\305\212\130\306\145\012\170\127\362\306\043\017\001
\331\040\113\336\017\373\222\205\165\052\134\163\215\155\173\045
\221\312\356\105\256\006\113\000\314\323\261\131\120\332\072\210
\073\051\103\106\136\227\053\124\316\123\157\215\112\347\226\372
\277\161\016\102\213\174\375\050\240\320\110\312\332\304\201\114
\273\242\163\223\046\310\353\014\326\046\210\266\300\044\317\273
\275\133\353\165\175\351\010\216\206\063\054\171\167\011\151\245
\211\374\263\160\220\207\166\217\323\042\273\102\316\275\163\013
\040\046\052\320\233\075\160\036\044\154\315\207\166\251\027\226
\267\317\015\222\373\216\030\251\230\111\321\236\376\140\104\162
\041\271\031\355\302\365\061\361\071\110\210\220\044\165\124\026
\255\316\364\370\151\024\144\071\373\243\270\272\160\100\307\047

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\034\277\304\126\123\372\143\145\320\363\034\016\026\365\153\206
\130\115\030\324\344\015\216\245\235\133\221\334\166\044\120\077
\306\052\373\331\267\234\265\326\346\320\331\350\031\213\025\161
\110\255\267\352\330\131\210\324\220\277\026\263\331\351\254\131
\141\124\310\034\272\312\301\312\341\271\040\114\217\072\223\211
\245\240\314\277\323\366\165\244\165\226\155\126
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "TeliaSonera Root CA v1"

Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera

Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96

Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera

Not Valid Before: Thu Oct 18 12:00:50 2007

Not Valid After : Mon Oct 18 12:00:50 2032

Fingerprint (SHA-256):

DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89

Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TeliaSonera Root CA v1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\103\023\273\226\361\325\206\233\301\116\152\222\366\317\366\064
\151\207\202\067
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\067\101\111\033\030\126\232\046\365\255\302\146\373\100\245\114
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END

CKA_ISSUER MULTILINE_OCTAL

```
\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372
\213\315\226
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED

CK_BBOOL CK_FALSE

#

Certificate "E-Tugra Certification Authority"

#

Issuer: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

Serial Number:6a:68:3e:9c:51:9b:cb:53

Subject: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

Not Valid Before: Tue Mar 05 12:09:48 2013

Not Valid After : Fri Mar 03 12:09:48 2023

Fingerprint (SHA-256):

B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C

Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "E-Tugra Certification Authority"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145

\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\152\150\076\234\121\233\313\123
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\113\060\202\004\063\240\003\002\001\002\002\010\152
\150\076\234\121\233\313\123\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\262\061\013\060\011\006\003\125
\004\006\023\002\124\122\061\017\060\015\006\003\125\004\007\014
\006\101\156\153\141\162\141\061\100\060\076\006\003\125\004\012
\014\067\105\055\124\165\304\237\162\141\040\105\102\107\040\102
\151\154\151\305\237\151\155\040\124\145\153\156\157\154\157\152
\151\154\145\162\151\040\166\145\040\110\151\172\155\145\164\154
\145\162\151\040\101\056\305\236\056\061\046\060\044\006\003\125
\004\013\014\035\105\055\124\165\147\162\141\040\123\145\162\164
\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145\172
\151\061\050\060\046\006\003\125\004\003\014\037\105\055\124\165
\147\162\141\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061
\063\060\063\060\065\061\062\060\071\064\070\132\027\015\062\063
\060\063\060\063\061\062\060\071\064\070\132\060\201\262\061\013
\060\011\006\003\125\004\006\023\002\124\122\061\017\060\015\006
\003\125\004\007\014\006\101\156\153\141\162\141\061\100\060\076
\006\003\125\004\012\014\067\105\055\124\165\304\237\162\141\040
\105\102\107\040\102\151\154\151\305\237\151\155\040\124\145\153
\156\157\154\157\152\151\154\145\162\151\040\166\145\040\110\151
\172\155\145\164\154\145\162\151\040\101\056\305\236\056\061\046
\060\044\006\003\125\004\013\014\035\105\055\124\165\147\162\141
\040\123\145\162\164\151\146\151\153\141\163\171\157\156\040\115
\145\162\153\145\172\151\061\050\060\046\006\003\125\004\003\014
\037\105\055\124\165\147\162\141\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\342\365\077\223\005\121\036\205\142\124\136\172\013\365\030
\007\203\256\176\257\174\367\324\212\153\245\143\103\071\271\113
\367\303\306\144\211\075\224\056\124\200\122\071\071\007\113\113
\335\205\007\166\207\314\277\057\225\114\314\175\247\075\274\107
\017\230\160\370\214\205\036\164\216\222\155\033\100\321\231\015
\273\165\156\310\251\153\232\300\204\061\257\312\103\313\353\053
\064\350\217\227\153\001\233\325\016\112\010\252\133\222\164\205
\103\323\200\256\241\210\133\256\263\352\136\313\026\232\167\104
\310\241\366\124\150\316\336\217\227\053\272\133\100\002\014\144
\027\300\265\223\315\341\361\023\146\316\014\171\357\321\221\050
\253\137\240\022\122\060\163\031\216\217\341\214\007\242\303\273

\112\360\352\037\025\250\356\045\314\244\106\370\033\042\357\263
\016\103\272\054\044\270\305\054\134\324\034\370\135\144\275\303
\223\136\050\247\077\047\361\216\036\323\052\120\005\243\125\331
\313\347\071\123\300\230\236\214\124\142\213\046\260\367\175\215
\174\344\306\236\146\102\125\202\107\347\262\130\215\146\367\007
\174\056\066\346\120\034\077\333\103\044\305\277\206\107\171\263
\171\034\367\132\364\023\354\154\370\077\342\131\037\225\356\102
\076\271\255\250\062\205\111\227\106\376\113\061\217\132\313\255
\164\107\037\351\221\267\337\050\004\042\240\324\017\135\342\171
\117\352\154\205\206\275\250\246\316\344\372\303\341\263\256\336
\074\121\356\313\023\174\001\177\204\016\135\121\224\236\023\014
\266\056\245\114\371\071\160\066\157\226\312\056\014\104\125\305
\312\372\135\002\243\337\326\144\214\132\263\001\012\251\265\012
\107\027\377\357\221\100\052\216\241\106\072\061\230\345\021\374
\314\273\111\126\212\374\271\320\141\232\157\145\154\346\303\313
\076\165\111\376\217\247\342\211\305\147\327\235\106\023\116\061
\166\073\044\263\236\021\145\206\253\177\357\035\324\370\274\347
\254\132\134\267\132\107\134\125\316\125\264\042\161\133\133\013
\360\317\334\240\141\144\352\251\327\150\012\143\247\340\015\077
\240\257\323\252\322\176\357\121\240\346\121\053\125\222\025\027
\123\313\267\146\016\146\114\370\371\165\114\220\347\022\160\307
\105\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035
\016\004\026\004\024\056\343\333\262\111\320\234\124\171\134\372
\047\052\376\314\116\322\350\116\124\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035
\043\004\030\060\026\200\024\056\343\333\262\111\320\234\124\171
\134\372\047\052\376\314\116\322\350\116\124\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\005
\067\072\364\115\267\105\342\105\165\044\217\266\167\122\350\034
\330\020\223\145\363\362\131\006\244\076\036\051\354\135\321\320
\253\174\340\012\220\110\170\355\116\230\003\231\376\050\140\221
\035\060\035\270\143\174\250\346\065\265\372\323\141\166\346\326
\007\113\312\151\232\262\204\172\167\223\105\027\025\237\044\320
\230\023\022\377\273\240\056\375\116\114\207\370\316\134\252\230
\033\005\340\000\106\112\202\200\245\063\213\050\334\355\070\323
\337\345\076\351\376\373\131\335\141\204\117\322\124\226\023\141
\023\076\217\200\151\276\223\107\265\065\103\322\132\273\075\134
\357\263\102\107\315\073\125\023\006\260\011\333\375\143\366\072
\210\012\231\157\176\341\316\033\123\152\104\146\043\121\010\173
\274\133\122\242\375\006\067\070\100\141\217\112\226\270\220\067
\370\146\307\170\220\000\025\056\213\255\121\065\123\007\250\153
\150\256\371\116\074\007\046\315\010\005\160\314\071\077\166\275
\245\323\147\046\001\206\246\123\322\140\073\174\103\177\125\212
\274\225\032\301\050\071\114\037\103\322\221\364\162\131\212\271
\126\374\077\264\235\332\160\234\166\132\214\103\120\356\216\060
\162\115\337\377\111\367\306\251\147\331\155\254\002\021\342\072
\026\045\247\130\010\313\157\123\101\234\110\070\107\150\063\321


```
\327\307\217\324\164\041\324\303\005\220\172\377\316\226\210\261
\025\051\135\043\253\320\140\241\022\117\336\364\027\315\062\345
\311\277\310\103\255\375\056\216\361\257\342\364\230\372\022\037
\040\330\300\247\014\205\305\220\364\073\055\226\046\261\054\276
\114\253\353\261\322\212\311\333\170\023\017\036\011\235\155\217
\000\237\002\332\301\372\037\172\172\011\304\112\346\210\052\227
\237\211\213\375\067\137\137\072\316\070\131\206\113\257\161\013
\264\330\362\160\117\237\062\023\343\260\247\127\345\332\332\103
\313\204\064\362\050\304\352\155\364\052\357\301\153\166\332\373
\176\273\205\074\322\123\302\115\276\161\341\105\321\375\043\147
\015\023\165\373\317\145\147\042\235\256\260\011\321\011\377\035
\064\277\376\043\227\067\322\071\372\075\015\006\013\264\333\073
\243\253\157\134\035\266\176\350\263\202\064\355\006\134\044
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "E-Tugra Certification Authority"

Issuer: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

Serial Number:6a:68:3e:9c:51:9b:cb:53

Subject: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

Not Valid Before: Tue Mar 05 12:09:48 2013

Not Valid After : Fri Mar 03 12:09:48 2023

Fingerprint (SHA-256):

B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C

Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39

CKA_CLASS CK_OBJECT_CLASS

CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "E-Tugra Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\121\306\347\010\111\006\156\363\222\324\134\240\015\155\243\142
\217\303\122\071
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\270\241\003\143\260\275\041\161\160\212\157\023\072\273\171\111
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151
```

```
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\124\165\147\162\141\040\123\145\162\164\151\146\151\153\141\163
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\010\152\150\076\234\121\233\313\123
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "T-TeleSec GlobalRoot Class 2"

#

Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

Serial Number: 1 (0x1)

Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

Not Valid Before: Wed Oct 01 10:40:14 2008

Not Valid After : Sat Oct 01 23:59:59 2033

Fingerprint (SHA-256):

91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52

Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164
\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123
\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035
\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060
\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145
\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141
\163\163\040\062\060\036\027\015\060\070\061\060\060\061\061\060
\064\060\061\064\132\027\015\063\063\061\060\060\061\062\063\065
\071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006
\023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124
\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162
\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142
\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171
\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164
\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124
\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157
\164\040\103\154\141\163\163\040\062\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\252\137\332\033\137\350
\163\221\345\332\134\364\242\346\107\345\363\150\125\140\005\035
\002\244\263\233\131\363\036\212\257\064\255\374\015\302\331\110
\031\356\151\217\311\040\374\041\252\007\031\355\260\134\254\145
\307\137\355\002\174\173\174\055\033\326\272\271\200\302\030\202
\026\204\372\146\260\010\306\124\043\201\344\315\271\111\077\366
\117\156\067\110\050\070\017\305\276\347\150\160\375\071\227\115
\322\307\230\221\120\252\304\104\263\043\175\071\107\351\122\142

\326\022\223\136\267\061\226\102\005\373\166\247\036\243\365\302
\374\351\172\305\154\251\161\117\352\313\170\274\140\257\307\336
\364\331\313\276\176\063\245\156\224\203\360\064\372\041\253\352
\216\162\240\077\244\336\060\133\357\206\115\152\225\133\103\104
\250\020\025\034\345\001\127\305\230\361\346\006\050\221\252\040
\305\267\123\046\121\103\262\013\021\225\130\341\300\017\166\331
\300\215\174\201\363\162\160\236\157\376\032\216\331\137\065\306
\262\157\064\174\276\110\117\342\132\071\327\330\235\170\236\237
\206\076\003\136\031\213\104\242\325\307\002\003\001\000\001\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\277
\131\040\066\000\171\240\240\042\153\214\325\362\141\322\270\054
\313\202\112\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\061\003\242\141\013\037\164\350\162
\066\306\155\371\115\236\372\042\250\341\201\126\317\315\273\237
\352\253\221\031\070\257\252\174\025\115\363\266\243\215\245\364
\216\366\104\251\247\350\041\225\255\076\000\142\026\210\360\002
\272\374\141\043\346\063\233\060\172\153\066\142\173\255\004\043
\204\130\145\342\333\053\212\347\045\123\067\142\123\137\274\332
\001\142\051\242\246\047\161\346\072\042\176\301\157\035\225\160
\040\112\007\064\337\352\377\025\200\345\272\327\172\330\133\165
\174\005\172\051\107\176\100\250\061\023\167\315\100\073\264\121
\107\172\056\021\343\107\021\336\235\146\320\213\325\124\146\372
\203\125\352\174\302\051\211\033\351\157\263\316\342\005\204\311
\057\076\170\205\142\156\311\137\301\170\143\164\130\300\110\030
\014\231\071\353\244\314\032\265\171\132\215\025\234\330\024\015
\366\172\007\127\307\042\203\005\055\074\233\045\046\075\030\263
\251\103\174\310\310\253\144\217\016\243\277\234\033\235\060\333
\332\320\031\056\252\074\361\373\063\200\166\344\315\255\031\117
\005\047\216\023\241\156\302

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "T-TeleSec GlobalRoot Class 2"

Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

Serial Number: 1 (0x1)

Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

Not Valid Before: Wed Oct 01 10:40:14 2008

Not Valid After : Sat Oct 01 23:59:59 2033

Fingerprint (SHA-256):

91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52

#

```

Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\131\015\055\175\210\117\100\056\141\176\245\142\062\027\145\317
\027\330\224\351
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\053\233\236\344\173\154\037\000\162\032\314\301\167\171\337\152
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Atos TrustedRoot 2011"
#
# Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011
# Serial Number:5c:33:cb:62:2c:5f:b3:32
# Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011
# Not Valid Before: Thu Jul 07 14:58:30 2011
# Not Valid After : Tue Dec 31 23:59:59 2030
# Fingerprint (SHA-256):
F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74
# Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL

```

CK_FALSE

CKA_LABEL UTF8 "Atos TrustedRoot 2011"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157
\163\061\013\060\011\006\003\125\004\006\023\002\104\105

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157
\163\061\013\060\011\006\003\125\004\006\023\002\104\105

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\010\134\063\313\142\054\137\263\062

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\167\060\202\002\137\240\003\002\001\002\002\010\134
\063\313\142\054\137\263\062\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\074\061\036\060\034\006\003\125\004
\003\014\025\101\164\157\163\040\124\162\165\163\164\145\144\122
\157\157\164\040\062\060\061\061\061\015\060\013\006\003\125\004
\012\014\004\101\164\157\163\061\013\060\011\006\003\125\004\006
\023\002\104\105\060\036\027\015\061\061\060\067\060\067\061\064
\065\070\063\060\132\027\015\063\060\061\062\063\061\062\063\065
\071\065\071\132\060\074\061\036\060\034\006\003\125\004\003\014
\025\101\164\157\163\040\124\162\165\163\164\145\144\122\157\157
\164\040\062\060\061\061\061\015\060\013\006\003\125\004\012\014
\004\101\164\157\163\061\013\060\011\006\003\125\004\006\023\002
\104\105\060\202\001\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\225\205\073\227\157\052\073\056\073\317\246\363\051
\065\276\317\030\254\076\252\331\370\115\240\076\032\107\271\274
\232\337\362\376\314\076\107\350\172\226\302\044\216\065\364\251
\014\374\202\375\155\301\162\142\047\275\352\153\353\347\212\314
\124\076\220\120\317\200\324\225\373\350\265\202\324\024\305\266
\251\125\045\127\333\261\120\366\260\140\144\131\172\151\317\003
\267\157\015\276\312\076\157\164\162\352\252\060\052\163\142\276
\111\221\141\310\021\376\016\003\052\367\152\040\334\002\025\015
\136\025\152\374\343\202\301\265\305\235\144\011\154\243\131\230
\007\047\307\033\226\053\141\164\161\154\103\361\367\065\211\020
\340\236\354\125\241\067\042\242\207\004\005\054\107\175\264\034
\271\142\051\146\050\312\267\341\223\365\244\224\003\231\271\160
\205\265\346\110\352\215\120\374\331\336\314\157\007\016\335\013
\162\235\200\060\026\007\225\077\050\016\375\305\165\117\123\326

\164\232\264\044\056\216\002\221\317\166\305\233\036\125\164\234
\170\041\261\360\055\361\013\237\302\325\226\030\037\360\124\042
\172\214\007\002\003\001\000\001\243\175\060\173\060\035\006\003
\125\035\016\004\026\004\024\247\245\006\261\054\246\011\140\356
\321\227\351\160\256\274\073\031\154\333\041\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003
\125\035\043\004\030\060\026\200\024\247\245\006\261\054\246\011
\140\356\321\227\351\160\256\274\073\031\154\333\041\060\030\006
\003\125\035\040\004\021\060\017\060\015\006\013\053\006\001\004
\001\260\055\003\004\001\001\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\003\202\001\001\000\046\167\064\333\224
\110\206\052\101\235\054\076\006\220\140\304\214\254\013\124\270
\037\271\173\323\007\071\344\372\076\173\262\075\116\355\237\043
\275\227\363\153\134\357\356\375\100\246\337\241\223\241\012\206
\254\357\040\320\171\001\275\170\367\031\330\044\061\064\004\001
\246\272\025\232\303\047\334\330\117\017\314\030\143\377\231\017
\016\221\153\165\026\341\041\374\330\046\307\107\267\246\317\130
\162\161\176\272\341\115\225\107\073\311\257\155\241\264\301\354
\211\366\264\017\070\265\342\144\334\045\317\246\333\353\232\134
\231\241\305\010\336\375\346\332\325\326\132\105\014\304\267\302
\265\024\357\264\021\377\016\025\265\365\365\333\306\275\353\132
\247\360\126\042\251\074\145\124\306\025\250\275\206\236\315\203
\226\150\172\161\201\211\341\013\341\352\021\033\150\010\314\151
\236\354\236\101\236\104\062\046\172\342\207\012\161\075\353\344
\132\244\322\333\305\315\306\336\140\177\271\363\117\104\222\357
\052\267\030\076\247\031\331\013\175\261\067\101\102\260\272\140
\035\362\376\011\021\260\360\207\173\247\235

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Atos TrustedRoot 2011"

Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011

Serial Number:5c:33:cb:62:2c:5f:b3:32

Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011

Not Valid Before: Thu Jul 07 14:58:30 2011

Not Valid After : Tue Dec 31 23:59:59 2030

Fingerprint (SHA-256):

F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74

Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

CKA_LABEL UTF8 "Atos TrustedRoot 2011"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\053\261\365\076\125\014\035\305\361\324\346\267\152\106\113\125
\006\002\254\041
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\256\271\304\062\113\254\177\135\146\314\167\224\273\052\167\126
END
CKA_ISSUER MULTILINE_OCTAL
\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060
\061\061\061\015\060\013\006\003\125\004\012\014\004\101\164\157
\163\061\013\060\011\006\003\125\004\006\023\002\104\105
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\134\063\313\142\054\137\263\062
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate
# "QuoVadis Root CA 1 G3"
#
# Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
# Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93
# Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 17:27:44 2012
# Not Valid After : Sun Jan 12 17:27:44 2042
# Fingerprint (SHA-256):
8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74
# Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 1 G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063
END
CKA_ID

```


UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023
\050\265\226\324\145\223

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\024\170
\130\137\056\255\054\031\113\343\067\007\065\064\023\050\265\226
\324\145\223\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126
\141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034
\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040
\122\157\157\164\040\103\101\040\061\040\107\063\060\036\027\015
\061\062\060\061\061\062\061\067\062\067\064\064\132\027\015\064
\062\060\061\061\062\061\067\062\067\064\064\132\060\110\061\013
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114
\151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023
\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103
\101\040\061\040\107\063\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\240\276\120\020\216\351\362\154\100
\264\004\234\205\271\061\312\334\055\344\021\251\004\074\033\125
\301\347\130\060\035\044\264\303\357\205\336\214\054\341\301\075
\337\202\346\117\255\107\207\154\354\133\111\301\112\325\273\217
\354\207\254\177\202\232\206\354\075\003\231\122\001\322\065\236
\254\332\360\123\311\146\074\324\254\002\001\332\044\323\073\250
\002\106\257\244\034\343\370\163\130\166\267\366\016\220\015\265
\360\317\314\372\371\306\114\345\303\206\060\012\215\027\176\065
\353\305\337\273\016\234\300\215\207\343\210\070\205\147\372\076
\307\253\340\023\234\005\030\230\317\223\365\261\222\264\374\043
\323\317\325\304\047\111\340\236\074\233\010\243\213\135\052\041
\340\374\071\252\123\332\175\176\317\032\011\123\274\135\005\004
\317\241\112\217\213\166\202\015\241\370\322\307\024\167\133\220
\066\007\201\233\076\006\372\122\136\143\305\246\000\376\245\351
\122\033\122\265\222\071\162\003\011\142\275\260\140\026\156\246
\335\045\302\003\146\335\363\004\321\100\342\116\213\206\364\157
\345\203\240\047\204\136\004\301\365\220\275\060\075\304\357\250
\151\274\070\233\244\244\226\321\142\332\151\300\001\226\256\313
\304\121\064\352\014\252\377\041\216\131\217\112\134\344\141\232

\247\322\351\052\170\215\121\075\072\025\356\242\131\216\251\134
\336\305\371\220\042\345\210\105\161\335\221\231\154\172\237\075
\075\230\174\136\366\276\026\150\240\136\256\013\043\374\132\017
\252\042\166\055\311\241\020\035\344\323\104\043\220\210\237\306
\052\346\327\365\232\263\130\036\057\060\211\010\033\124\242\265
\230\043\354\010\167\034\225\135\141\321\313\211\234\137\242\112
\221\232\357\041\252\111\026\010\250\275\141\050\061\311\164\255
\205\366\331\305\261\213\321\345\020\062\115\137\213\040\072\074
\111\037\063\205\131\015\333\313\011\165\103\151\163\373\153\161
\175\360\337\304\114\175\306\243\056\310\225\171\313\163\242\216
\116\115\044\373\136\344\004\276\162\033\246\047\055\111\132\231
\172\327\134\011\040\267\177\224\271\117\361\015\034\136\210\102
\033\021\267\347\221\333\236\154\364\152\337\214\006\230\003\255
\314\050\357\245\107\363\123\002\003\001\000\001\243\102\060\100
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\035\006\003\125\035\016\004\026\004\024\243\227\326\363
\136\242\020\341\253\105\237\074\027\144\074\356\001\160\234\314
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\002\001\000\030\372\133\165\374\076\172\307\137\167\307\312
\337\317\137\303\022\304\100\135\324\062\252\270\152\327\325\025
\025\106\230\043\245\346\220\133\030\231\114\343\255\102\243\202
\061\066\210\315\351\373\304\004\226\110\213\001\307\215\001\317
\133\063\006\226\106\146\164\035\117\355\301\266\271\264\015\141
\314\143\176\327\056\167\214\226\034\052\043\150\153\205\127\166
\160\063\023\376\341\117\246\043\167\030\372\032\214\350\275\145
\311\317\077\364\311\027\334\353\307\274\300\004\056\055\106\057
\151\146\303\033\217\376\354\076\323\312\224\277\166\012\045\015
\251\173\002\034\251\320\073\137\013\300\201\072\075\144\341\277
\247\055\116\275\115\304\330\051\306\042\030\320\305\254\162\002
\202\077\252\072\242\072\042\227\061\335\010\143\303\165\024\271
\140\050\055\133\150\340\026\251\146\202\043\121\365\353\123\330
\061\233\173\351\267\235\113\353\210\026\317\371\135\070\212\111
\060\217\355\361\353\031\364\167\032\061\030\115\147\124\154\057
\157\145\371\333\075\354\041\354\136\364\364\213\312\140\145\124
\321\161\144\364\371\246\243\201\063\066\063\161\360\244\170\137
\116\255\203\041\336\064\111\215\350\131\254\235\362\166\132\066
\362\023\364\257\340\011\307\141\052\154\367\340\235\256\273\206
\112\050\157\056\356\264\171\315\220\063\303\263\166\372\365\360
\154\235\001\220\372\236\220\366\234\162\317\107\332\303\037\344
\065\040\123\362\124\321\337\141\203\246\002\342\045\070\336\205
\062\055\136\163\220\122\135\102\304\316\075\113\341\371\031\204
\035\325\242\120\314\101\373\101\024\303\275\326\311\132\243\143
\146\002\200\275\005\072\073\107\234\354\000\046\114\365\210\121
\277\250\043\177\030\007\260\013\355\213\046\241\144\323\141\112
\353\134\237\336\263\257\147\003\263\037\335\155\135\151\150\151
\253\136\072\354\174\151\274\307\073\205\116\236\025\271\264\025
\117\303\225\172\130\327\311\154\351\154\271\363\051\143\136\264

```
\054\360\055\075\355\132\145\340\251\133\100\302\110\231\201\155
\236\037\006\052\074\022\264\213\017\233\242\044\360\246\215\326
\172\340\113\266\144\226\143\225\204\302\112\315\034\056\044\207
\063\140\345\303
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "QuoVadis Root CA 1 G3"

Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM

Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93

Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM

Not Valid Before: Thu Jan 12 17:27:44 2012

Not Valid After : Sun Jan 12 17:27:44 2042

Fingerprint (SHA-256):

8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74

Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "QuoVadis

Root CA 1 G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\033\216\352\127\226\051\032\311\071\352\270\012\201\032\163\163
\300\223\171\147
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\244\274\133\077\376\067\232\372\144\360\342\372\005\075\013\253
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023
\050\265\226\324\145\223
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```
#
# Certificate "QuoVadis Root CA 2 G3"
#
# Issuer: CN=QuoVadis Root CA
2 G3,O=QuoVadis Limited,C=BM
# Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28
# Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 18:59:32 2012
# Not Valid After : Sun Jan 12 18:59:32 2042
# Fingerprint (SHA-256):
8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40
# Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 2 G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062\040\107\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\104\127\064\044\133\201\211\233\065\362\316\270\053\073
\133\247\046\360\165\050
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\140\060\202\003\110\240\003\002\001\002\002\024\104
\127\064\044\133\201\211\233\065\362\316\270\053\073\133\247\046
\360\165\050\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126
\141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034
\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040
\122\157\157\164\040\103\101\040\062\040\107\063\060\036\027\015
\061\062\060\061\061\062\061\070\065\071\063\062\132\027\015\064
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\062\060\061\061\062\061\070\065\071\063\062\132\060\110\061\013
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114
\151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023
\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103
\101\040\062\040\107\063\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\241\256\045\262\001\030\334\127\210
\077\106\353\371\257\342\353\043\161\342\232\321\141\146\041\137
\252\257\047\121\345\156\033\026\324\055\175\120\260\123\167\275
\170\072\140\342\144\002\233\174\206\233\326\032\216\255\377\037
\025\177\325\225\036\022\313\346\024\204\004\301\337\066\263\026
\237\212\343\311\333\230\064\316\330\063\027\050\106\374\247\311
\360\322\264\325\115\011\162\111\371\362\207\343\251\332\175\241
\175\153\262\072\045\251\155\122\104\254\370\276\156\373\334\246
\163\221\220\141\246\003\024\040\362\347\207\243\210\255\255\240
\214\377\246\013\045\122\045\347\026\001\325\313\270\065\201\014
\243\073\360\341\341\374\132\135\316\200\161\155\370\111\253\076
\073\272\270\327\200\001\373\245\353\133\263\305\136\140\052\061
\240\257\067\350\040\072\237\250\062\054\014\314\011\035\323\236
\216\135\274\114\230\356\305\032\150\173\354\123\246\351\024\065
\243\337\315\200\237\014\110\373\034\364\361\277\112\270\372\325
\214\161\112\307\037\255\376\101\232\263\203\135\362\204\126\357
\245\127\103\316\051\255\214\253\125\277\304\373\133\001\335\043
\041\241\130\000\216\303\320\152\023\355\023\343\022\053\200\334
\147\346\225\262\315\036\042\156\052\370\101\324\362\312\024\007
\215\212\125\022\306\151\365\270\206\150\057\123\136\260\322\252
\041\301\230\346\060\343\147\125\307\233\156\254\031\250\125\246
\105\006\320\043\072\333\353\145\135\052\021\021\360\073\117\312
\155\364\064\304\161\344\377\000\132\366\134\256\043\140\205\163
\361\344\020\261\045\256\325\222\273\023\301\014\340\071\332\264
\071\127\265\253\065\252\162\041\073\203\065\347\061\337\172\041
\156\270\062\010\175\035\062\221\025\112\142\162\317\343\167\241
\274\325\021\033\166\001\147\010\340\101\013\303\353\025\156\370
\244\031\331\242\253\257\342\047\122\126\053\002\212\054\024\044
\371\277\102\002\277\046\310\306\217\340\156\070\175\123\055\345
\355\230\263\225\143\150\177\371\065\364\337\210\305\140\065\222
\300\174\151\034\141\225\026\320\353\336\013\257\076\004\020\105
\145\130\120\070\257\110\362\131\266\026\362\074\015\220\002\306
\160\056\001\255\074\025\327\002\003\001\000\001\243\102\060\100
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\035\006\003\125\035\016\004\026\004\024\355\347\157\166
\132\277\140\354\111\133\306\245\167\273\162\026\161\233\304\075
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\002\001\000\221\337\200\077\103\011\176\161\302\367\353\263
\210\217\341\121\262\274\075\165\371\050\135\310\274\231\233\173
\135\252\345\312\341\012\367\350\262\323\237\335\147\061\176\272

\001\252\307\152\101\073\220\324\010\134\262\140\152\220\360\310
\316\003\142\371\213\355\373\156\052\334\006\115\074\051\017\211
\026\212\130\114\110\017\350\204\141\352\074\162\246\167\344\102
\256\210\243\103\130\171\176\256\312\245\123\015\251\075\160\275
\040\031\141\244\154\070\374\103\062\341\301\107\377\370\354\361
\021\042\062\226\234\302\366\133\151\226\173\040\014\103\101\232
\133\366\131\031\210\336\125\210\067\121\013\170\134\012\036\243
\102\375\307\235\210\017\300\362\170\002\044\124\223\257\211\207
\210\311\112\200\035\352\320\156\076\141\056\066\273\065\016\047
\226\375\146\064\073\141\162\163\361\026\134\107\006\124\111\000
\172\130\022\260\012\357\205\375\261\270\063\165\152\223\034\022
\346\140\136\157\035\177\311\037\043\313\204\141\237\036\202\104
\371\137\255\142\125\044\232\122\230\355\121\347\241\176\227\072
\346\057\037\021\332\123\200\054\205\236\253\065\020\333\042\137
\152\305\136\227\123\362\062\002\011\060\243\130\360\015\001\325
\162\306\261\174\151\173\303\365\066\105\314\141\156\136\114\224
\305\136\256\350\016\136\213\277\367\315\340\355\241\016\033\063
\356\124\030\376\017\276\357\176\204\153\103\343\160\230\333\135
\165\262\015\131\007\205\025\043\071\326\361\337\251\046\017\326
\110\307\263\246\042\365\063\067\132\225\107\237\173\272\030\025
\157\377\326\024\144\203\111\322\012\147\041\333\017\065\143\140
\050\042\343\261\225\203\315\205\246\335\057\017\347\147\122\156
\273\057\205\174\365\112\163\347\305\076\300\275\041\022\005\077
\374\267\003\111\002\133\310\045\346\342\124\070\365\171\207\214
\035\123\262\116\205\173\006\070\307\054\370\370\260\162\215\045
\345\167\122\364\003\034\110\246\120\137\210\040\060\156\362\202
\103\253\075\227\204\347\123\373\041\301\117\017\042\232\206\270
\131\052\366\107\075\031\210\055\350\205\341\236\354\205\010\152
\261\154\064\311\035\354\110\053\073\170\355\146\304\216\171\151
\203\336\177\214

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "QuoVadis Root CA 2 G3"

Issuer: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28

Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

Not Valid Before: Thu Jan 12 18:59:32 2012

Not Valid After : Sun Jan 12 18:59:32 2042

Fingerprint (SHA-256):

8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40

Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 2 G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\011\074\141\363\213\213\334\175\125\337\165\070\002\005\000\341
\045\365\310\066
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\257\014\206\156\277\100\055\177\013\076\022\120\272\022\075\006
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\104\127\064\044\133\201\211\233\065\362\316\270\053\073
\133\247\046\360\165\050
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "QuoVadis Root CA 3 G3"
#
# Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d
#
# Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 20:26:32 2012
# Not Valid After : Sun Jan 12 20:26:32 2042
# Fingerprint (SHA-256):
88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46
# Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 3 G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003

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\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\056\365\233\002\050\247\333\172\377\325\243\251\356\275
\003\240\317\022\152\035
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\140\060\202\003\110\240\003\002\001\002\002\024\056
\365\233\002\050\247\333\172\377\325\243\251\356\275\003\240\317
\022\152\035\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126
\141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034
\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040
\122\157\157\164\040\103\101\040\063\040\107\063\060\036\027\015
\061\062\060\061\061\062\062\060\062\066\063\062\132\027\015\064
\062\060\061\061\062\062\060\062\066\063\062\132\060\110\061\013
\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006
\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114
\151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023
\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103
\101\040\063\040\107\063\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\263\313\016\020\147\216\352\024\227
\247\062\052\012\126\066\177\150\114\307\263\157\072\043\024\221
\377\031\177\245\312\254\356\263\166\235\172\351\213\033\253\153
\061\333\372\013\123\114\257\305\245\032\171\074\212\114\377\254
\337\045\336\116\331\202\062\013\104\336\312\333\214\254\243\156
\026\203\073\246\144\113\062\211\373\026\026\070\176\353\103\342
\323\164\112\302\142\012\163\012\335\111\263\127\322\260\012\205
\235\161\074\336\243\313\300\062\363\001\071\040\103\033\065\321
\123\263\261\356\305\223\151\202\076\026\265\050\106\241\336\352
\211\011\355\103\270\005\106\212\206\365\131\107\276\033\157\001
\041\020\271\375\251\322\050\312\020\071\011\312\023\066\317\234
\255\255\100\164\171\053\002\077\064\377\372\040\151\175\323\356
\141\365\272\263\347\060\320\067\043\206\162\141\105\051\110\131
\150\157\167\246\056\201\276\007\115\157\257\316\304\105\023\221
\024\160\006\217\037\237\370\207\151\261\016\357\303\211\031\353
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\352\034\141\374\172\154\212\334\326\003\013\236\046\272\022\335
\324\124\071\253\046\243\063\352\165\201\332\055\315\017\117\344
\003\321\357\025\227\033\153\220\305\002\220\223\146\002\041\261
\107\336\213\232\112\200\271\125\217\265\242\057\300\326\063\147
\332\176\304\247\264\004\104\353\107\373\346\130\271\367\014\360
\173\053\261\300\160\051\303\100\142\055\073\110\151\334\043\074
\110\353\173\011\171\251\155\332\250\060\230\317\200\162\003\210
\246\133\106\256\162\171\174\010\003\041\145\256\267\341\034\245
\261\052\242\061\336\146\004\367\300\164\350\161\336\377\075\131
\314\226\046\022\213\205\225\127\032\253\153\165\013\104\075\021
\050\074\173\141\267\342\217\147\117\345\354\074\114\140\200\151
\127\070\036\001\133\215\125\350\307\337\300\314\167\043\064\111
\165\174\366\230\021\353\055\336\355\101\056\024\005\002\177\340
\376\040\353\065\347\021\254\042\316\127\075\336\311\060\155\020
\003\205\315\361\377\214\026\265\301\262\076\210\154\140\177\220
\117\225\367\366\055\255\001\071\007\004\372\165\200\175\277\111
\120\355\357\311\304\174\034\353\200\176\333\266\320\335\023\376
\311\323\234\327\262\227\251\002\003\001\000\001\243\102\060\100
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\035\006\003\125\035\016\004\026\004\024\306\027\320\274
\250\352\002\103\362\033\006\231\135\053\220\040\271\327\234\344
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\002\001\000\064\141\331\126\265\022\207\125\115\335\243\065
\061\106\273\244\007\162\274\137\141\142\350\245\373\013\067\261
\074\266\263\372\051\235\177\002\365\244\311\250\223\267\172\161
\050\151\217\163\341\122\220\332\325\276\072\345\267\166\152\126
\200\041\337\135\346\351\072\236\345\076\366\242\151\307\052\012
\260\030\107\334\040\160\175\122\243\076\131\174\301\272\311\310
\025\100\141\312\162\326\160\254\322\267\360\034\344\206\051\360
\316\357\150\143\320\265\040\212\025\141\232\176\206\230\264\311
\302\166\373\314\272\060\026\314\243\141\306\164\023\345\153\357
\243\025\352\003\376\023\213\144\344\323\301\322\350\204\373\111
\321\020\115\171\146\353\252\375\364\215\061\036\160\024\255\334
\336\147\023\114\201\025\141\274\267\331\221\167\161\031\201\140
\273\360\130\245\265\234\013\367\217\042\125\047\300\113\001\155
\073\231\015\324\035\233\143\147\057\320\356\015\312\146\274\224
\117\246\255\355\374\356\143\254\127\077\145\045\317\262\206\217
\320\010\377\270\166\024\156\336\345\047\354\253\170\265\123\271
\266\077\350\040\371\322\250\276\141\106\312\207\214\204\363\371
\361\240\150\233\042\036\201\046\233\020\004\221\161\300\006\037
\334\240\323\271\126\247\343\230\055\177\203\235\337\214\053\234
\062\216\062\224\360\001\074\042\052\237\103\302\056\303\230\071
\007\070\173\374\136\000\102\037\363\062\046\171\203\204\366\345
\360\301\121\022\300\013\036\004\043\014\124\245\114\057\111\305
\112\321\266\156\140\015\153\374\153\213\205\044\144\267\211\016
\253\045\107\133\074\317\176\111\275\307\351\012\306\332\367\176
\016\027\010\323\110\227\320\161\222\360\017\071\076\064\152\034

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\175\330\362\042\256\273\151\364\063\264\246\110\125\321\017\016
\046\350\354\266\013\055\247\205\065\315\375\131\310\237\321\315
\076\132\051\064\271\075\204\316\261\145\324\131\221\221\126\165
\041\301\167\236\371\172\341\140\235\323\255\004\030\364\174\353
\136\223\217\123\112\042\051\370\110\053\076\115\206\254\133\177
\313\006\231\131\140\330\130\145\225\215\104\321\367\177\176\047
\177\175\256\200\365\007\114\266\076\234\161\124\231\004\113\375
\130\371\230\364
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "QuoVadis Root CA 3 G3"

Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM

Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d

Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM

Not Valid Before: Thu Jan 12 20:26:32 2012

Not Valid After : Sun Jan 12 20:26:32 2042

Fingerprint (SHA-256):

88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46

Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "QuoVadis Root CA 3 G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\110\022\275\222\074\250\304\071\006\347\060\155\047\226\346\244
\317\042\056\175
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\337\175\271\255\124\157\150\241\337\211\127\003\227\103\260\327
END
```

CKA_ISSUER MULTILINE_OCTAL

```
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\024\056\365\233\002\050\247\333\172\377\325\243\251\356\275
\003\240\317\022\152\035
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "DigiCert Assured ID Root G2"

#

Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b

Subject:

CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

Not Valid Before: Thu Aug 01 12:00:00 2013

Not Valid After : Fri Jan 15 12:00:00 2038

Fingerprint (SHA-256):

7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85

Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert Assured ID Root G2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232
\364\113

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\226\060\202\002\176\240\003\002\001\002\002\020\013

\223\034\072\326\071\147\352\147\043\277\303\257\232\364\113\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145
\162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157
\157\164\040\107\062\060\036\027\015\061\063\060\070\060\061\061
\062\060\060\060\060\132\027\015\063\070\060\061\061\065\061\062
\060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104
\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006
\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145
\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023
\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145
\144\040\111\104\040\122\157\157\164\040\107\062\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\331\347\050
\057\122\077\066\162\111\210\223\064\363\370\152\036\061\124\200
\237\255\124\101\265\107\337\226\250\324\257\200\055\271\012\317
\165\375\211\245\175\044\372\343\042\014\053\274\225\027\013\063
\277\031\115\101\006\220\000\275\014\115\020\376\007\265\347\034
\156\042\125\061\145\227\275\323\027\322\036\142\363\333\352\154
\120\214\077\204\014\226\317\267\313\003\340\312\155\241\024\114
\033\211\335\355\000\260\122\174\257\221\154\261\070\023\321\351
\022\010\300\000\260\034\053\021\332\167\160\066\233\256\316\171
\207\334\202\160\346\011\164\160\125\151\257\243\150\237\277\335
\266\171\263\362\235\160\051\125\364\253\377\225\141\363\311\100
\157\035\321\276\223\273\323\210\052\273\235\277\162\132\126\161
\073\077\324\363\321\012\376\050\357\243\356\331\231\257\003\323
\217\140\267\362\222\241\261\275\211\211\037\060\315\303\246\056
\142\063\256\026\002\167\104\132\347\201\012\074\247\104\056\171
\270\077\004\274\134\240\207\341\033\257\121\216\315\354\054\372
\370\376\155\360\072\174\252\213\344\147\225\061\215\002\003\001
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026
\004\024\316\303\112\271\231\125\362\270\333\140\277\251\176\275
\126\265\227\066\247\326\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\001\001\000\312\245\125\214\343\310
\101\156\151\047\247\165\021\357\074\206\066\157\322\235\306\170
\070\035\151\226\242\222\151\056\070\154\233\175\004\324\211\245
\261\061\067\212\311\041\314\253\154\315\213\034\232\326\277\110
\322\062\146\301\212\300\363\057\072\357\300\343\324\221\206\321
\120\343\003\333\163\167\157\112\071\123\355\336\046\307\265\175
\257\053\102\321\165\142\343\112\053\002\307\120\113\340\151\342
\226\154\016\104\146\020\104\217\255\005\353\370\171\254\246\033

```
\350\067\064\235\123\311\141\252\242\122\257\112\160\026\206\302
\072\310\261\023\160\066\330\317\356\364\012\064\325\133\114\375
\007\234\242\272\331\001\162\134\363\115\301\335\016\261\034\015
\304\143\276\255\364\024\373\211\354\242\101\016\114\314\310\127
\100\320\156\003\252\315\014\216\211\231\231\154\360\074\060\257
\070\337\157\274\243\276\051\040\047\253\164\377\023\042\170\336
\227\122\125\036\203\265\124\040\003\356\256\300\117\126\336\067
\314\303\177\252\004\047\273\323\167\270\142\333\027\174\234\050
\042\023\163\154\317\046\365\212\051\347
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert Assured ID Root G2"

Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b

Subject: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

Not Valid Before: Thu Aug 01 12:00:00 2013

Not Valid After : Fri Jan 15 12:00:00 2038

Fingerprint (SHA-256):

7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85

#

Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert Assured ID Root G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\241\113\110\331\103\356\012\016\100\220\117\074\340\244\300\221
\223\121\135\077
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\222\070\271\370\143\044\202\145\054\127\063\346\376\201\217\235
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232
```

```
\364\113
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Assured ID Root G3"
#
# Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec
# Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2
# Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "DigiCert Assured ID Root G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240
```

\154\354

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\106\060\202\001\315\240\003\002\001\002\002\020\013
\241\132\372\035\337\240\265\111\104\257\315\044\240\154\354\060
\012\006\010\052\206\110\316\075\004\003\003\060\145\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003
\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156
\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056
\144\151\147\151\143\145\162\164\056\143\157\155\061\044\060\042
\006\003\125\004\003\023\033\104\151\147\151\103\145\162\164\040
\101\163\163\165\162\145\144\040\111\104\040\122\157\157\164\040
\107\063\060\036\027\015\061\063\060\070\060\061\061\062\060\060
\060\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060
\060\132\060\145\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151
\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004
\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056
\143\157\155\061\044\060\042\006\003\125\004\003\023\033\104\151
\147\151\103\145\162\164\040\101\163\163\165\162\145\144\040\111
\104\040\122\157\157\164\040\107\063\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\031\347\274\254\104\145\355\315\270\077\130\373\215\261\127
\251\104\055\005\025\362\357\013\377\020\164\237\265\142\122\137
\146\176\037\345\334\033\105\171\013\314\306\123\012\235\215\135
\002\331\251\131\336\002\132\366\225\052\016\215\070\112\212\111
\306\274\306\003\070\007\137\125\332\176\011\156\342\177\136\320
\105\040\017\131\166\020\326\240\044\360\055\336\066\362\154\051
\071\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026\004
\024\313\320\275\251\341\230\005\121\241\115\067\242\203\171\316
\215\035\052\344\204\060\012\006\010\052\206\110\316\075\004\003
\003\003\147\000\060\144\002\060\045\244\201\105\002\153\022\113
\165\164\117\310\043\343\160\362\165\162\336\174\211\360\317\221
\162\141\236\136\020\222\131\126\271\203\307\020\347\070\351\130
\046\066\175\325\344\064\206\071\002\060\174\066\123\360\060\345
\142\143\072\231\342\266\243\073\233\064\372\036\332\020\222\161
\136\221\023\247\335\244\156\222\314\062\326\365\041\146\307\057
\352\226\143\152\145\105\222\225\001\264

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert Assured ID Root G3"

Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

```
# Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec
# Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri
Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2
# Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Assured ID Root G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\365\027\242\117\232\110\306\311\370\242\000\046\237\334\017\110
\054\253\060\211
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\174\177\145\061\014\201\337\215\272\076\231\342\134\255\156\373
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240
\154\354
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Global Root G2"
#
# Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5
# Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
```


CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F
Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\003\072\361\346\247\021\251\240\273\050\144\261\035\011
\372\345
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\216\060\202\002\166\240\003\002\001\002\002\020\003
\072\361\346\247\021\251\240\273\050\144\261\035\011\372\345\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\141
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107
\062\060\036\027\015\061\063\060\070\060\061\061\062\060\060\060
\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060\060
\132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103
\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013

\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143
\157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147
\151\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157
\164\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\273\067\315\064\334\173\153\311\262\150\220
\255\112\165\377\106\272\041\012\010\215\365\031\124\311\373\210
\333\363\256\362\072\211\221\074\172\346\253\006\032\153\317\254
\055\350\136\011\044\104\272\142\232\176\326\243\250\176\340\124
\165\040\005\254\120\267\234\143\032\154\060\334\332\037\031\261
\327\036\336\375\327\340\313\224\203\067\256\354\037\103\116\335
\173\054\322\275\056\245\057\344\251\270\255\072\324\231\244\266
\045\351\233\153\000\140\222\140\377\117\041\111\030\367\147\220
\253\141\006\234\217\362\272\351\264\351\222\062\153\265\363\127
\350\135\033\315\214\035\253\225\004\225\111\363\065\055\226\343
\111\155\335\167\343\373\111\113\264\254\125\007\251\217\225\263
\264\043\273\114\155\105\360\366\251\262\225\060\264\375\114\125
\214\047\112\127\024\174\202\235\315\163\222\323\026\112\006\014
\214\120\321\217\036\011\276\027\241\346\041\312\375\203\345\020
\274\203\245\012\304\147\050\366\163\024\024\075\106\166\303\207
\024\211\041\064\115\257\017\105\014\246\111\241\272\273\234\305
\261\063\203\051\205\002\003\001\000\001\243\102\060\100\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060
\035\006\003\125\035\016\004\026\004\024\116\042\124\040\030\225
\346\343\156\346\017\372\372\271\022\355\006\027\217\071\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001
\001\000\140\147\050\224\157\016\110\143\353\061\335\352\147\030
\325\211\175\074\305\213\112\177\351\276\333\053\027\337\260\137
\163\167\052\062\023\071\201\147\102\204\043\362\105\147\065\354
\210\277\370\217\260\141\014\064\244\256\040\114\204\306\333\370
\065\341\166\331\337\246\102\273\307\104\010\206\177\066\164\044
\132\332\154\015\024\131\065\275\362\111\335\266\037\311\263\015
\107\052\075\231\057\273\134\273\265\324\040\341\231\137\123\106
\025\333\150\233\360\363\060\325\076\061\342\215\204\236\343\212
\332\332\226\076\065\023\245\137\360\371\160\120\160\107\101\021
\127\031\116\300\217\256\006\304\225\023\027\057\033\045\237\165
\362\261\216\231\241\157\023\261\101\161\376\210\052\310\117\020
\040\125\327\363\024\105\345\340\104\364\352\207\225\062\223\016
\376\123\106\372\054\235\377\213\042\271\113\331\011\105\244\336
\244\270\232\130\335\033\175\122\237\216\131\103\210\201\244\236
\046\325\157\255\335\015\306\067\175\355\003\222\033\345\167\137
\166\356\074\215\304\135\126\133\242\331\146\156\263\065\067\345
\062\266

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER

```

CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "DigiCert Global Root G2"
# Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5
# Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F
# Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\337\074\044\371\277\326\146\166\033\046\200\163\376\006\321\314
\215\117\202\244
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\344\246\212\310\124\254\122\102\106\012\375\162\110\033\052\104
END
CKA_ISSUER
MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\072\361\346\247\021\251\240\273\050\144\261\035\011
\372\345
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Global Root G3"
#
# Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72

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# Subject: CN=DigiCert Global
Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:D0
# Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Global Root G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253
\105\162
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\077\060\202\001\305\240\003\002\001\002\002\020\005
\125\126\274\362\136\244\065\065\303\244\017\325\253\105\162\060
\012\006\010\052\206\110\316\075\004\003\003\060\141\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003
\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156
\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056
\144\151\147\151\143\145\162\164\056\143\157\155\061\040\060\036
\006\003\125\004\003\023\027\104\151\147\151\103\145\162\164\040
\107\154\157\142\141\154\040\122\157\157\164\040\107\063\060\036
\027\015\061\063\060\070\060\061\061\062\060\060\060\060\132\027
```

\015\063\070\060\061\061\065\061\062\060\060\060\060\132\060\141
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145
\162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107
\063\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\335\247\331\273\212\270\013
\373\013\177\041\322\360\276\276\163\363\063\135\032\274\064\352
\336\306\233\274\320\225\366\360\314\320\013\272\141\133\121\106
\176\236\055\237\356\216\143\014\027\354\007\160\365\317\204\056
\100\203\234\350\077\101\155\073\255\323\244\024\131\066\170\235
\003\103\356\020\023\154\162\336\256\210\247\241\153\265\103\316
\147\334\043\377\003\034\243\342\076\243\102\060\100\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035
\006\003\125\035\016\004\026\004\024\263\333\110\244\371\241\305
\330\256\066\101\314\021\143\151\142\051\274\113\306\060\012\006
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\061
\000\255\274\362\154\077\022\112\321\055\071\303\012\011\227\163
\364\210\066\214\210\047\273\346\210\215\120\205\247\143\371\236
\062\336\146\223\017\361\314\261\011\217\335\154\253\372\153\177
\240\002\060\071\146\133\302\144\215\270\236\120\334\250\325\111
\242\355\307\334\321\111\177\027\001\270\310\206\217\116\214\210
\053\250\232\251\212\305\321\000\275\370\124\342\232\345\133\174
\263\047\027

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert Global Root G3"

Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72

Subject: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US

Not Valid Before: Thu Aug 01 12:00:00 2013

Not Valid After : Fri Jan 15 12:00:00 2038

Fingerprint (SHA-256):

31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:D0

Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert Global Root G3"

```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\176\004\336\211\152\076\146\155\000\346\207\323\077\372\331\073
\350\075\064\236
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\365\135\244\120\245\373\050\176\036\017\015\314\226\127\126\312
END
CKA_ISSUER
MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253
\105\162
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert Trusted Root G4"
#
# Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c
# Subject: CN=DigiCert
Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After : Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
55:2F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88
# Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert Trusted Root G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023

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\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157
\164\040\107\064

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157
\164\040\107\064

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\005\233\033\127\236\216\041\062\342\071\007\275\247\167
\165\134

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\220\060\202\003\170\240\003\002\001\002\002\020\005
\233\033\127\236\216\041\062\342\071\007\275\247\167\165\134\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\142
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060
\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164
\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167
\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061
\041\060\037\006\003\125\004\003\023\030\104\151\147\151\103\145
\162\164\040\124\162\165\163\164\145\144\040\122\157\157\164\040
\107\064\060\036\027\015\061\063\060\070\060\061\061\065\061\062\060\060\060
\060\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060
\060\132\060\142\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151
\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004
\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056
\143\157\155\061\041\060\037\006\003\125\004\003\023\030\104\151
\147\151\103\145\162\164\040\124\162\165\163\164\145\144\040\122
\157\157\164\040\107\064\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\277\346\220\163\150\336\273\344\135
\112\074\060\042\060\151\063\354\302\247\045\056\311\041\075\362
\212\330\131\302\341\051\247\075\130\253\166\232\315\256\173\033
\204\015\304\060\037\363\033\244\070\026\353\126\306\227\155\035
\253\262\171\362\312\021\322\344\137\326\005\074\122\017\122\037
\306\236\025\245\176\276\237\251\127\026\131\125\162\257\150\223
\160\302\262\272\165\231\152\163\062\224\321\020\104\020\056\337
\202\363\007\204\346\164\073\155\161\342\055\014\033\356\040\325

\311\040\035\143\051\055\316\354\136\116\310\223\370\041\141\233
\064\353\005\306\136\354\133\032\274\353\311\317\315\254\064\100
\137\261\172\146\356\167\310\110\250\146\127\127\237\124\130\216
\014\053\267\117\247\060\331\126\356\312\173\135\343\255\311\117
\136\345\065\347\061\313\332\223\136\334\216\217\200\332\266\221
\230\100\220\171\303\170\307\266\261\304\265\152\030\070\003\020
\215\330\324\067\244\056\005\175\210\365\202\076\020\221\160\253
\125\202\101\062\327\333\004\163\052\156\221\001\174\041\114\324
\274\256\033\003\165\135\170\146\331\072\061\104\232\063\100\277
\010\327\132\111\244\302\346\251\240\147\335\244\047\274\241\117
\071\265\021\130\027\367\044\134\106\217\144\367\301\151\210\166
\230\166\075\131\135\102\166\207\211\227\151\172\110\360\340\242
\022\033\146\232\164\312\336\113\036\347\016\143\256\346\324\357
\222\222\072\236\075\334\000\344\105\045\211\266\232\104\031\053
\176\300\224\264\322\141\155\353\063\331\305\337\113\004\000\314
\175\034\225\303\217\367\041\262\262\021\267\273\177\362\325\214
\160\054\101\140\252\261\143\030\104\225\032\166\142\176\366\200
\260\373\350\144\246\063\321\211\007\341\275\267\346\103\244\030
\270\246\167\001\341\017\224\014\041\035\262\124\051\045\211\154
\345\016\122\121\107\164\276\046\254\266\101\165\336\172\254\137
\215\077\311\274\323\101\021\022\133\345\020\120\353\061\305\312
\162\026\042\011\337\174\114\165\077\143\354\041\137\304\040\121
\153\157\261\253\206\213\117\302\326\105\137\235\040\374\241\036
\305\300\217\242\261\176\012\046\231\365\344\151\057\230\035\055
\365\331\251\262\035\345\033\002\003\001\000\001\243\102\060\100
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\206\060\035\006\003\125\035\016\004\026\004\024\354\327\343\202
\322\161\135\144\114\337\056\147\077\347\272\230\256\034\017\117
\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003
\202\002\001\000\273\141\331\175\251\154\276\027\304\221\033\303
\241\242\000\215\343\144\150\017\126\317\167\256\160\371\375\232
\112\231\271\311\170\134\014\014\137\344\346\024\051\126\013\066
\111\135\104\143\340\255\234\226\030\146\033\043\015\075\171\351
\155\153\326\124\370\322\074\301\103\100\256\035\120\365\122\374
\220\073\273\230\231\151\153\307\301\247\250\150\244\047\334\235
\371\047\256\060\205\271\366\147\115\072\076\217\131\071\042\123
\104\353\310\135\003\312\355\120\172\175\142\041\012\200\310\163
\146\321\240\005\140\137\350\245\264\247\257\250\367\155\065\234
\174\132\212\326\242\070\231\363\170\213\364\115\322\040\013\336
\004\356\214\233\107\201\162\015\300\024\062\357\060\131\056\256
\340\161\362\126\344\152\227\157\222\120\155\226\215\150\172\232
\262\066\024\172\006\362\044\271\011\021\120\327\010\261\270\211
\172\204\043\141\102\051\345\243\315\242\040\101\327\321\234\144
\331\352\046\241\213\024\327\114\031\262\120\101\161\075\077\115
\160\043\206\014\112\334\201\322\314\062\224\204\015\010\011\227
\034\117\300\356\153\040\164\060\322\340\071\064\020\205\041\025
\001\010\350\125\062\336\161\111\331\050\027\120\115\346\276\115


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\321\165\254\320\312\373\101\270\103\245\252\323\303\005\104\117
\054\066\233\342\372\342\105\270\043\123\154\006\157\147\125\177
\106\265\114\077\156\050\132\171\046\322\244\250\142\227\322\036
\342\355\112\213\274\033\375\107\112\015\337\147\146\176\262\133
\101\320\073\344\364\073\364\004\143\351\357\302\124\000\121\240
\212\052\311\316\170\314\325\352\207\004\030\263\316\257\111\210
\257\363\222\231\266\263\346\141\017\322\205\000\347\120\032\344
\033\225\235\031\241\271\234\261\233\261\000\036\357\320\017\117
\102\154\311\012\274\356\103\372\072\161\245\310\115\046\245\065
\375\211\135\274\205\142\035\062\322\240\053\124\355\232\127\301
\333\372\020\317\031\267\213\112\033\217\001\266\047\225\123\350
\266\211\155\133\274\150\324\043\350\213\121\242\126\371\360\246
\200\240\326\036\263\274\017\017\123\165\051\252\352\023\167\344
\336\214\201\041\255\007\020\107\021\255\207\075\007\321\165\274
\317\363\146\176
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert Trusted Root G4"

Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c

Subject: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

Not Valid Before: Thu Aug 01 12:00:00 2013

Not Valid After : Fri Jan 15 12:00:00 2038

Fingerprint (SHA-256):

55:2F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88

#

Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert Trusted Root G4"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\335\373\026\315\111\061\311\163\242\003\175\077\310\072\115\175
\167\135\005\344
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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\170\362\374\252\140\037\057\264\353\311\067\272\123\056\165\111
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
```

```

\155\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157
\164\040\107\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\233\033\127\236\216\041\062\342\071\007\275\247\167
\165\134
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "COMODO RSA Certification Authority"
#
# Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d
# Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester,C=GB
# Not Valid Before: Tue Jan 19 00:00:00 2010
# Not Valid After : Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34
# Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO RSA Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102

```

\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\114\252\371\312\333\143\157\340\037\367\116\330\133\003
\206\235

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\330\060\202\003\300\240\003\002\001\002\002\020\114
\252\371\312\333\143\157\340\037\367\116\330\133\003\206\235\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201
\205\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033
\060\031\006\003\125\004\010\023\022\107\162\145\141\164\145\162
\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006
\003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060
\030\006\003\125\004\012\023\021\103\117\115\117\104\117\040\103
\101\040\114\151\155\151\164\145\144\061\053\060\051\006\003\125
\004\003\023\042\103\117\115\117\104\117\040\122\123\101\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\060\036\027\015\061\060\060\061\061\071
\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062
\063\065\071\065\071\132\060\201\205\061\013\060\011\006\003\125
\004\006\023\002\107\102\061\033\060\031\006\003\125\004\010\023
\022\107\162\145\141\164\145\162\040\115\141\156\143\150\145\163
\164\145\162\061\020\060\016\006\003\125\004\007\023\007\123\141
\154\146\157\162\144\061\032\060\030\006\003\125\004\012\023\021
\103\117\115\117\104\117\040\103\101\040\114\151\155\151\164\145
\144\061\053\060\051\006\003\125\004\003\023\042\103\117\115\117
\104\117\040\122\123\101\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\221
\350\124\222\322\012\126\261\254\015\044\335\305\317\104\147\164
\231\053\067\243\175\043\160\000\161\274\123\337\304\372\052\022
\217\113\177\020\126\275\237\160\162\267\141\177\311\113\017\027
\247\075\343\260\004\141\356\377\021\227\307\364\206\076\012\372
\076\134\371\223\346\064\172\331\024\153\347\234\263\205\240\202
\172\166\257\161\220\327\354\375\015\372\234\154\372\337\260\202
\364\024\176\371\276\304\246\057\117\177\231\177\265\374\147\103
\162\275\014\000\326\211\353\153\054\323\355\217\230\034\024\253
\176\345\343\156\374\330\250\344\222\044\332\103\153\142\270\125

\375\352\301\274\154\266\213\363\016\215\232\344\233\154\151\231
\370\170\110\060\105\325\255\341\015\074\105\140\374\062\226\121
\047\274\147\303\312\056\266\153\352\106\307\307\040\240\261\037
\145\336\110\010\272\244\116\251\362\203\106\067\204\353\350\314
\201\110\103\147\116\162\052\233\134\275\114\033\050\212\134\042
\173\264\253\230\331\356\340\121\203\303\011\106\116\155\076\231
\372\225\027\332\174\063\127\101\074\215\121\355\013\266\134\257
\054\143\032\337\127\310\077\274\351\135\304\233\257\105\231\342
\243\132\044\264\272\251\126\075\317\157\252\377\111\130\276\360
\250\377\364\270\255\351\067\373\272\270\364\013\072\371\350\103
\102\036\211\330\204\313\023\361\331\273\341\211\140\270\214\050
\126\254\024\035\234\012\347\161\353\317\016\335\075\251\226\241
\110\275\074\367\257\265\015\042\114\300\021\201\354\126\073\366
\323\242\342\133\267\262\004\042\122\225\200\223\151\350\216\114
\145\361\221\003\055\160\164\002\352\213\147\025\051\151\122\002
\273\327\337\120\152\125\106\277\240\243\050\141\177\160\320\303
\242\252\054\041\252\107\316\050\234\006\105\166\277\202\030\047
\264\325\256\264\313\120\346\153\364\114\206\161\060\351\246\337
\026\206\340\330\377\100\335\373\320\102\210\177\243\063\072\056
\134\036\101\021\201\143\316\030\161\153\053\354\246\212\267\061
\134\072\152\107\340\303\171\131\326\040\032\257\362\152\230\252
\162\274\127\112\322\113\235\273\020\374\260\114\101\345\355\035
\075\136\050\235\234\314\277\263\121\332\247\107\345\204\123\002
\003\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004
\026\004\024\273\257\176\002\075\372\246\361\074\204\216\255\356
\070\230\354\331\062\062\324\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206
\367\015\001\001\014\005\000\003\202\002\001\000\012\361\325\106
\204\267\256\121\273\154\262\115\101\024\000\223\114\234\313\345
\300\124\317\240\045\216\002\371\375\260\242\015\365\040\230\074
\023\055\254\126\242\260\326\176\021\222\351\056\272\236\056\232
\162\261\275\031\104\154\141\065\242\232\264\026\022\151\132\214
\341\327\076\244\032\350\057\003\364\256\141\035\020\033\052\244
\213\172\305\376\005\246\341\300\326\310\376\236\256\217\053\272
\075\231\370\330\163\011\130\106\156\246\234\364\327\047\323\225
\332\067\203\162\034\323\163\340\242\107\231\003\070\135\325\111
\171\000\051\034\307\354\233\040\034\007\044\151\127\170\262\071
\374\072\204\240\265\234\174\215\277\056\223\142\047\267\071\332
\027\030\256\275\074\011\150\377\204\233\074\325\326\013\003\343
\127\236\024\367\321\353\117\310\275\207\043\267\266\111\103\171
\205\134\272\353\222\013\241\306\350\150\250\114\026\261\032\231
\012\350\123\054\222\273\241\011\030\165\014\145\250\173\313\043
\267\032\302\050\205\303\033\377\320\053\142\357\244\173\011\221
\230\147\214\024\001\315\150\006\152\143\041\165\003\200\210\212
\156\201\306\205\362\251\244\055\347\364\245\044\020\107\203\312
\315\364\215\171\130\261\006\233\347\032\052\331\235\001\327\224
\175\355\003\112\312\360\333\350\251\001\076\365\126\231\311\036

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\216\111\075\273\345\011\271\340\117\111\222\075\026\202\100\314
\314\131\306\346\072\355\022\056\151\074\154\225\261\375\252\035
\173\177\206\276\036\016\062\106\373\373\023\217\165\177\114\213
\113\106\143\376\000\064\100\160\301\303\271\241\335\246\160\342
\004\263\101\274\351\200\221\352\144\234\172\341\042\003\251\234
\156\157\016\145\117\154\207\207\136\363\156\240\371\165\245\233
\100\350\123\262\047\235\112\271\300\167\041\215\377\207\362\336
\274\214\357\027\337\267\111\013\321\362\156\060\013\032\016\116
\166\355\021\374\365\351\126\262\175\277\307\155\012\223\214\245
\320\300\266\035\276\072\116\224\242\327\156\154\013\302\212\174
\372\040\363\304\344\345\315\015\250\313\221\222\261\174\205\354
\265\024\151\146\016\202\347\315\316\310\055\246\121\177\041\301
\065\123\205\006\112\135\237\255\273\033\137\164
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "COMODO RSA Certification Authority"

Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d

Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

Not Valid Before: Tue Jan 19 00:00:00 2010

Not Valid After : Mon Jan 18 23:59:59 2038

Fingerprint (SHA-256):

52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34

Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "COMODO RSA Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\257\345\322\104\250\321\031\102\060\377\107\237\342\370\227\273
\315\172\214\264
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\033\061\260\161\100\066\314\024\066\221\255\304\076\375\354\030
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
```

```
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\114\252\371\312\333\143\157\340\037\367\116\330\133\003
\206\235
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "USERTrust RSA Certification Authority"

#

Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d

Subject: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Not Valid Before: Mon

Feb 01 00:00:00 2010

Not Valid After : Mon Jan 18 23:59:59 2038

Fingerprint (SHA-256):

E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2

Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "USERTrust RSA Certification Authority"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065
\003\055

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\336\060\202\003\306\240\003\002\001\002\002\020\001
\375\155\060\374\243\312\121\250\033\274\144\016\065\003\055\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201
\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023
\060\021\006\003\125\004\010\023\012\116\145\167\040\112\145\162
\163\145\171\061\024\060\022\006\003\125\004\007\023\013\112\145
\162\163\145\171\040\103\151\164\171\061\036\060\034\006\003\125
\004\012\023\025\124\150\145\040\125\123\105\122\124\122\125\123
\124\040\116\145\164\167\157\162\153\061\056\060\054\006\003\125
\004\003\023\045\125\123\105\122\124\162\165\163\164\040\122\123
\101\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\060\036\027\015\061\060\060
\062\060\061\060\060\060\060\060\060\132\027\015\063\070\060\061
\061\070\062\063\065\071\065\071\132\060\201\210\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125
\004\010\023\012\116\145\167\040\112\145\162\163\145\171\061\024
\060\022\006\003\125\004\007\023\013\112\145\162\163\145\171\040
\103\151\164\171\061\036\060\034\006\003\125\004\012\023\025\124
\150\145\040\125\123\105\122\124\122\125\123\124\040\116\145\164
\167\157\162\153\061\056\060\054\006\003\125\004\003\023\045\125
\123\105\122\124\162\165\163\164\040\122\123\101\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\200\022\145\027\066\016\303\333\010\263\320
\254\127\015\166\355\315\047\323\114\255\120\203\141\342\252\040
\115\011\055\144\011\334\316\211\237\314\075\251\354\366\317\301
\334\361\323\261\326\173\067\050\021\053\107\332\071\306\274\072
\031\264\137\246\275\175\235\243\143\102\266\166\362\251\073\053
\221\370\342\157\320\354\026\040\220\011\076\342\350\164\311\030
\264\221\324\142\144\333\177\243\006\361\210\030\152\220\042\074

\274\376\023\360\207\024\173\366\344\037\216\324\344\121\306\021
\147\106\010\121\313\206\024\124\077\274\063\376\176\154\234\377
\026\235\030\275\121\216\065\246\247\146\310\162\147\333\041\146
\261\324\233\170\003\300\120\072\350\314\360\334\274\236\114\376
\257\005\226\065\037\127\132\267\377\316\371\075\267\054\266\366
\124\335\310\347\022\072\115\256\114\212\267\134\232\264\267\040
\075\312\177\042\064\256\176\073\150\146\001\104\347\001\116\106
\123\233\063\140\367\224\276\123\067\220\163\103\363\062\303\123
\357\333\252\376\164\116\151\307\153\214\140\223\336\304\307\014
\337\341\062\256\314\223\073\121\170\225\147\213\356\075\126\376
\014\320\151\017\033\017\363\045\046\153\063\155\367\156\107\372
\163\103\345\176\016\245\146\261\051\174\062\204\143\125\211\304
\015\301\223\124\060\031\023\254\323\175\067\247\353\135\072\154
\065\134\333\101\327\022\332\251\111\013\337\330\200\212\011\223
\142\216\265\146\317\045\210\315\204\270\261\077\244\071\017\331
\002\236\353\022\114\225\174\363\153\005\251\136\026\203\314\270
\147\342\350\023\235\314\133\202\323\114\263\355\133\377\336\345
\163\254\043\073\055\000\277\065\125\164\011\111\330\111\130\032
\177\222\066\346\121\222\016\363\046\175\034\115\027\274\311\354
\103\046\320\277\101\137\100\251\104\104\364\231\347\127\207\236
\120\037\127\124\250\076\375\164\143\057\261\120\145\011\346\130
\102\056\103\032\114\264\360\045\107\131\372\004\036\223\324\046
\106\112\120\201\262\336\276\170\267\374\147\025\341\311\127\204
\036\017\143\326\351\142\272\326\137\125\056\352\134\306\050\010
\004\045\071\270\016\053\251\362\114\227\034\007\077\015\122\365
\355\357\057\202\017\002\003\001\000\001\243\102\060\100\060\035
\006\003\125\035\016\004\026\004\024\123\171\277\132\252\053\112
\317\124\200\341\330\233\300\235\362\262\003\146\313\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015
\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202\002
\001\000\134\324\174\015\317\367\001\175\101\231\145\014\163\305
\122\237\313\370\317\231\006\177\033\332\103\025\237\236\002\125
\127\226\024\361\122\074\047\207\224\050\355\037\072\001\067\242
\166\374\123\120\300\204\233\306\153\116\272\214\041\117\242\216
\125\142\221\363\151\025\330\274\210\343\304\252\013\375\357\250
\351\113\125\052\006\040\155\125\170\051\031\356\137\060\134\113
\044\021\125\377\044\232\156\136\052\053\356\013\115\237\177\367
\001\070\224\024\225\103\007\011\373\140\251\356\034\253\022\214
\240\232\136\247\230\152\131\155\213\077\010\373\310\321\105\257
\030\025\144\220\022\017\163\050\056\305\342\044\116\374\130\354
\360\364\105\376\042\263\353\057\216\322\331\105\141\005\301\227
\157\250\166\162\217\213\214\066\257\277\015\005\316\161\215\346
\246\157\037\154\246\161\142\305\330\320\203\162\014\361\147\021
\211\014\234\023\114\162\064\337\274\325\161\337\252\161\335\341
\271\154\214\074\022\135\145\332\275\127\022\266\103\153\377\345
\336\115\146\021\121\317\231\256\354\027\266\350\161\221\214\336
\111\376\335\065\161\242\025\047\224\034\317\141\343\046\273\157


```
\243\147\045\041\135\346\335\035\013\056\150\033\073\202\257\354
\203\147\205\324\230\121\164\261\271\231\200\211\377\177\170\031
\134\171\112\140\056\222\100\256\114\067\052\054\311\307\142\310
\016\135\367\066\133\312\340\045\045\001\264\335\032\007\234\167
\000\077\320\334\325\354\075\324\372\273\077\314\205\326\157\177
\251\055\337\271\002\367\365\227\232\265\065\332\303\147\260\207
\112\251\050\236\043\216\377\134\047\153\341\260\117\363\007\356
\000\056\324\131\207\313\122\101\225\352\364\107\327\356\144\101
\125\174\215\131\002\225\335\142\235\302\271\356\132\050\164\204
\245\233\267\220\307\014\007\337\365\211\066\164\062\326\050\301
\260\260\013\340\234\114\303\034\326\374\343\151\265\107\106\201
\057\242\202\253\323\143\104\160\304\215\377\055\063\272\255\217
\173\265\160\210\256\076\031\317\100\050\330\374\310\220\273\135
\231\042\365\122\346\130\305\037\210\061\103\356\210\035\327\306
\216\074\103\152\035\247\030\336\175\075\026\361\142\371\312\220
\250\375
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "USERTrust RSA Certification Authority"

Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d

Subject: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Not Valid Before: Mon Feb 01 00:00:00 2010

Not Valid After : Mon Jan 18 23:59:59 2038

Fingerprint (SHA-256):

E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2

Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "USERTrust RSA Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\053\217\033\127\063\015\273\242\320\172\154\121\367\016\351\015
\332\271\255\216
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\033\376\151\321\221\267\031\063\243\162\250\017\341\125\345\265
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
```

```
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065
\003\055
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "USERTrust ECC Certification Authority"

#

Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26

Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Not Valid Before: Mon Feb 01 00:00:00 2010

Not Valid After : Mon Jan 18 23:59:59 2038

Fingerprint (SHA-256):

4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A

Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "USERTrust ECC Certification Authority"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200
\314\046

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\217\060\202\002\025\240\003\002\001\002\002\020\134
\213\231\305\132\224\305\322\161\126\336\315\211\200\314\046\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\210\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006
\003\125\004\010\023\012\116\145\167\040\112\145\162\163\145\171
\061\024\060\022\006\003\125\004\007\023\013\112\145\162\163\145
\171\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\056\060\054\006\003\125\004\003\023
\045\125\123\105\122\124\162\165\163\164\040\105\103\103\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\060\036\027\015\061\060\060\062\060\061
\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062
\063\065\071\065\071\132\060\201\210\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\023\060\021\006\003\125\004\010\023
\012\116\145\167\040\112\145\162\163\145\171\061\024\060\022\006
\003\125\004\007\023\013\112\145\162\163\145\171\040\103\151\164
\171\061\036\060\034\006\003\125\004\012\023\025\124\150\145\040
\125\123\105\122\124\122\125\123\124\040\116\145\164\167\157\162
\153\061\056\060\054\006\003\125\004\003\023\045\125\123\105\122
\124\162\165\163\164\040\105\103\103\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\032\254\124\132\251\371\150
\043\347\172\325\044\157\123\306\132\330\113\253\306\325\266\321
\346\163\161\256\335\234\326\014\141\375\333\240\211\003\270\005
\024\354\127\316\356\135\077\342\041\263\316\367\324\212\171\340
\243\203\176\055\227\320\141\304\361\231\334\045\221\143\253\177

```
\060\243\264\160\342\307\241\063\234\363\277\056\134\123\261\137
\263\175\062\177\212\064\343\171\171\243\102\060\100\060\035\006
\003\125\035\016\004\026\004\024\072\341\011\206\324\317\031\302
\226\166\164\111\166\334\340\065\306\143\143\232\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\012\006
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\060
\066\147\241\026\010\334\344\227\000\101\035\116\276\341\143\001
\317\073\252\102\021\144\240\235\224\071\002\021\171\134\173\035
\372\144\271\356\026\102\263\277\212\302\011\304\354\344\261\115
\002\061\000\351\052\141\107\214\122\112\113\116\030\160\366\326
\104\326\156\365\203\272\155\130\275\044\331\126\110\352\357\304
\242\106\201\210\152\072\106\321\251\233\115\311\141\332\321\135
\127\152\030
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "USERTrust ECC Certification Authority"

Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26

Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

Not Valid Before: Mon Feb 01 00:00:00 2010

Not Valid After : Mon Jan 18 23:59:59 2038

Fingerprint (SHA-256):

4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A

Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "USERTrust ECC Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\321\313\312\135\262\325\052\177\151\073\147\115\345\360\132\035
\014\225\175\360
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\372\150\274\331\265\177\255\375\311\035\006\203\050\314\044\301
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
```

```
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200
\314\046
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "GlobalSign ECC Root CA - R5"

#

Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c

Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

Not Valid Before: Tue Nov 13 00:00:00 2012

Not Valid After : Tue Jan 19 03:14:07 2038

Fingerprint (SHA-256):

17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24

Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
```

\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371
\112\330\154

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\036\060\202\001\244\240\003\002\001\002\002\021\140
\131\111\340\046\056\273\125\371\012\167\212\161\371\112\330\154
\060\012\006\010\052\206\110\316\075\004\003\003\060\120\061\044
\060\042\006\003\125\004\013\023\033\107\154\157\142\141\154\123
\151\147\156\040\105\103\103\040\122\157\157\164\040\103\101\040
\055\040\122\065\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156\060\036
\027\015\061\062\061\061\061\063\060\060\060\060\060\060\132\027
\015\063\070\060\061\061\071\060\063\061\064\060\067\132\060\120
\061\044\060\042\006\003\125\004\013\023\033\107\154\157\142\141
\154\123\151\147\156\040\105\103\103\040\122\157\157\164\040\103
\101\040\055\040\122\065\061\023\060\021\006\003\125\004\012\023
\012\107\154\157\142\141\154\123\151\147\156\061\023\060\021\006
\003\125\004\003\023\012\107\154\157\142\141\154\123\151\147\156
\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053
\201\004\000\042\003\142\000\004\107\105\016\226\373\175\135\277
\351\071\321\041\370\237\013\266\325\173\036\222\072\110\131\034
\360\142\061\055\300\172\050\376\032\247\134\263\266\314\227\347
\105\324\130\372\321\167\155\103\242\300\207\145\064\012\037\172
\335\353\074\063\241\305\235\115\244\157\101\225\070\177\311\036
\204\353\321\236\111\222\207\224\207\014\072\205\112\146\237\235
\131\223\115\227\141\006\206\112\243\102\060\100\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006
\003\125\035\016\004\026\004\024\075\346\051\110\233\352\007\312
\041\104\112\046\336\156\336\322\203\320\237\131\060\012\006\010
\052\206\110\316\075\004\003\003\003\150\000\060\145\002\061\000
\345\151\022\311\156\333\306\061\272\011\101\341\227\370\373\375
\232\342\175\022\311\355\174\144\323\313\005\045\213\126\331\240
\347\136\135\116\013\203\234\133\166\051\240\011\046\041\152\142
\002\060\161\322\265\217\134\352\073\341\170\011\205\250\165\222
\073\310\134\375\110\357\015\164\042\250\010\342\156\305\111\316
\307\014\274\247\141\151\361\367\073\341\052\313\371\053\363\146
\220\067

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GlobalSign ECC Root CA - R5"

Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c

Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

Not Valid Before: Tue Nov 13 00:00:00 2012

Not Valid After : Tue Jan 19 03:14:07 2038

Fingerprint (SHA-256):

17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24

Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\037\044\306\060\315\244\030\357\040\151\377\255\117\335\137\106
\072\033\151\252

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\237\255\073\034\002\036\212\272\027\164\070\201\014\242\274\010

END

CKA_ISSUER

MULTILINE_OCTAL

\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371
\112\330\154

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Staat der Nederlanden Root CA - G3"

#

Issuer: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

Serial Number: 10003001 (0x98a239)

Subject: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

#

Not Valid Before: Thu Nov 14 11:28:42 2013
Not Valid After : Mon Nov 13 23:00:00 2028
Fingerprint (SHA-256):
3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28
Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\000\230\242\071
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\164\060\202\003\134\240\003\002\001\002\002\004\000
\230\242\071\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\116
\114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\061\053\060\051\006\003\125\004\003\014\042\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\040\122\157\157\164\040\103\101\040\055\040\107\063\060\036
\027\015\061\063\061\061\061\064\061\061\062\070\064\062\132\027
\015\062\070\061\061\061\063\062\063\060\060\060\060\132\060\132
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\036\060
\034\006\003\125\004\012\014\025\123\164\141\141\164\040\144\145
\162\040\116\145\144\145\162\154\141\156\144\145\156\061\053\060
\051\006\003\125\004\003\014\042\123\164\141\141\164\040\144\145
\162\040\116\145\144\145\162\154\141\156\144\145\156\040\122\157

\157\164\040\103\101\040\055\040\107\063\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\276\062\242\124\017
\160\373\054\134\131\353\154\304\244\121\350\205\052\263\314\112
\064\362\260\137\363\016\307\034\075\123\036\210\010\150\330\157
\075\255\302\236\314\202\147\007\047\207\150\161\072\237\165\226
\042\106\005\260\355\255\307\133\236\052\336\234\374\072\306\225
\247\365\027\147\030\347\057\111\010\014\134\317\346\314\064\355
\170\373\120\261\334\153\062\360\242\376\266\074\344\354\132\227
\307\077\036\160\010\060\240\334\305\263\155\157\320\202\162\021
\253\322\201\150\131\202\027\267\170\222\140\372\314\336\077\204
\353\215\070\063\220\012\162\043\372\065\314\046\161\061\321\162
\050\222\331\133\043\155\146\265\155\007\102\353\246\063\316\222
\333\300\366\154\143\170\315\312\116\075\265\345\122\233\361\276
\073\346\124\140\260\146\036\011\253\007\376\124\211\021\102\321
\367\044\272\140\170\032\230\367\311\021\375\026\301\065\032\124
\165\357\103\323\345\256\116\316\347\173\303\306\116\141\121\113
\253\232\105\113\241\037\101\275\110\123\025\161\144\013\206\263
\345\056\276\316\244\033\301\051\204\242\265\313\010\043\166\103
\042\044\037\027\004\324\156\234\306\374\177\053\146\032\354\212
\345\326\317\115\365\143\011\267\025\071\326\173\254\353\343\174
\351\116\374\165\102\310\355\130\225\014\006\102\242\234\367\344
\160\263\337\162\157\132\067\100\211\330\205\244\327\361\013\336
\103\031\324\112\130\054\214\212\071\236\277\204\207\361\026\073
\066\014\351\323\264\312\154\031\101\122\011\241\035\260\152\277
\202\357\160\121\041\062\334\005\166\214\313\367\144\344\003\120
\257\214\221\147\253\305\362\356\130\330\336\276\367\347\061\317
\154\311\073\161\301\325\210\265\145\274\300\350\027\027\007\022
\265\134\322\253\040\223\264\346\202\203\160\066\305\315\243\215
\255\213\354\243\301\103\207\346\103\342\064\276\225\213\065\355
\007\071\332\250\035\172\237\066\236\022\260\014\145\022\220\025
\140\331\046\100\104\343\126\140\245\020\324\152\074\375\101\334
\016\132\107\266\357\227\141\165\117\331\376\307\262\035\324\355
\135\111\263\251\152\313\146\204\023\325\134\240\334\337\156\167
\006\321\161\165\310\127\157\257\017\167\133\002\003\001\000\001
\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024
\124\255\372\307\222\127\256\312\065\234\056\022\373\344\272\135
\040\334\224\127\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\002\001\000\060\231\235\005\062\310\136\016
\073\230\001\072\212\244\347\007\367\172\370\347\232\337\120\103
\123\227\052\075\312\074\107\230\056\341\025\173\361\222\363\141
\332\220\045\026\145\300\237\124\135\016\003\073\133\167\002\234
\204\266\015\230\137\064\335\073\143\302\303\050\201\302\234\051
\056\051\342\310\303\001\362\063\352\052\252\314\011\010\367\145
\147\306\315\337\323\266\053\247\275\314\321\016\160\137\270\043
\321\313\221\116\012\364\310\172\345\331\143\066\301\324\337\374

```
\042\227\367\140\135\352\051\057\130\262\275\130\275\215\226\117
\020\165\277\110\173\075\121\207\241\074\164\042\302\374\007\177
\200\334\304\254\376\152\301\160\060\260\351\216\151\342\054\151
\201\224\011\272\335\376\115\300\203\214\224\130\300\106\040\257
\234\037\002\370\065\125\111\057\106\324\300\360\240\226\002\017
\063\305\161\363\236\043\175\224\267\375\072\323\011\203\006\041
\375\140\075\256\062\300\322\356\215\246\360\347\264\202\174\012
\314\160\311\171\200\370\376\114\367\065\204\031\212\061\373\012
\331\327\177\233\360\242\232\153\303\005\112\355\101\140\024\060
\321\252\021\102\156\323\043\002\004\013\306\145\335\335\122\167
\332\201\153\262\250\372\001\070\271\226\352\052\154\147\227\211
\224\236\274\341\124\325\344\152\170\357\112\275\053\232\075\100
\176\306\300\165\322\156\373\150\060\354\354\213\235\371\111\065
\232\032\054\331\263\225\071\325\036\222\367\246\271\145\057\345
\075\155\072\110\114\010\334\344\050\022\050\276\175\065\134\352
\340\026\176\023\033\152\327\076\327\236\374\055\165\262\301\024
\325\043\003\333\133\157\013\076\170\057\015\336\063\215\026\267
\110\347\203\232\201\017\173\301\103\115\125\004\027\070\112\121
\325\131\242\211\164\323\237\276\036\113\327\306\155\267\210\044
\157\140\221\244\202\205\133\126\101\274\320\104\253\152\023\276
\321\054\130\267\022\063\130\262\067\143\334\023\365\224\035\077
\100\121\365\117\365\072\355\310\305\353\302\036\035\026\225\172
\307\176\102\161\223\156\113\025\267\060\337\252\355\127\205\110
\254\035\152\335\071\151\344\341\171\170\276\316\005\277\241\014
\367\200\173\041\147\047\060\131
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Staat der Nederlanden Root CA - G3"

Issuer: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

Serial Number: 10003001 (0x98a239)

Subject: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL

Not Valid Before: Thu Nov 14 11:28:42 2013

Not Valid After : Mon Nov 13 23:00:00 2028

Fingerprint (SHA-256):

3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28

Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G3"

CKA_CERT_SHA1_HASH

MULTILINE_OCTAL

```
\330\353\153\101\121\222\131\340\363\347\205\000\300\075\266\210
```

```

\227\311\356\374
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\013\106\147\007\333\020\057\031\214\065\120\140\321\013\364\067
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\000\230\242\071
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "IdenTrust Commercial Root CA 1"
#
# Issuer: CN=IdenTrust Commercial Root CA
1,O=IdenTrust,C=US
# Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02
# Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US
# Not Valid Before: Thu Jan 16 18:12:23 2014
# Not Valid After : Mon Jan 16 18:12:23 2034
# Fingerprint (SHA-256):
5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE
# Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IdenTrust Commercial Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144
\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151
\141\154\040\122\157\157\164\040\103\101\040\061
END
CKA_ID

```

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144
\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151
\141\154\040\122\157\157\164\040\103\101\040\061

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000
\000\002

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\020\012
\001\102\200\000\000\001\105\043\310\104\265\000\000\000\002\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\112
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060
\020\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163
\164\061\047\060\045\006\003\125\004\003\023\036\111\144\145\156
\124\162\165\163\164\040\103\157\155\155\145\162\143\151\141\154
\040\122\157\157\164\040\103\101\040\061\060\036\027\015\061\064
\060\061\061\066\061\070\061\062\062\063\132\027\015\063\064\060
\061\061\066\061\070\061\062\062\063\132\060\112\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\022\060\020\006\003\125
\004\012\023\011\111\144\145\156\124\162\165\163\164\061\047\060
\045\006\003\125\004\003\023\036\111\144\145\156\124\162\165\163
\164\040\103\157\155\155\145\162\143\151\141\154\040\122\157\157
\164\040\103\101\040\061\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\247\120\031\336\077\231\075\324\063
\106\361\157\121\141\202\262\251\117\217\147\211\135\204\331\123
\335\014\050\331\327\360\377\256\225\103\162\231\371\265\135\174
\212\301\102\341\061\120\164\321\201\015\174\315\233\041\253\103
\342\254\255\136\206\156\363\011\212\037\132\062\275\242\353\224
\371\350\134\012\354\377\230\322\257\161\263\264\123\237\116\207
\357\222\274\275\354\117\062\060\210\113\027\136\127\304\123\302
\366\002\227\215\331\142\053\277\044\037\142\215\337\303\270\051
\113\111\170\074\223\140\210\042\374\231\332\066\310\302\242\324
\054\124\000\147\065\156\163\277\002\130\360\244\335\345\260\242
\046\172\312\340\066\245\031\026\365\375\267\357\256\077\100\365
\155\132\004\375\316\064\312\044\334\164\043\033\135\063\023\022
\135\304\001\045\366\060\335\002\135\237\340\325\107\275\264\353
\033\241\273\111\111\330\237\133\002\363\212\344\044\220\344\142
\117\117\301\257\213\016\164\027\250\321\162\210\152\172\001\111
\314\264\106\171\306\027\261\332\230\036\007\131\372\165\041\205
\145\335\220\126\316\373\253\245\140\235\304\235\371\122\260\213
\275\207\371\217\053\043\012\043\166\073\367\063\341\311\000\363
\151\371\113\242\340\116\274\176\223\071\204\007\367\104\160\176

\376\007\132\345\261\254\321\030\314\362\065\345\111\111\010\312
\126\311\075\373\017\030\175\213\073\301\023\302\115\217\311\117
\016\067\351\037\241\016\152\337\142\056\313\065\006\121\171\054
\310\045\070\364\372\113\247\211\134\234\322\343\015\071\206\112
\164\174\325\131\207\302\077\116\014\134\122\364\075\367\122\202
\361\352\243\254\375\111\064\032\050\363\101\210\072\023\356\350
\336\377\231\035\137\272\313\350\036\362\271\120\140\300\061\323
\163\345\357\276\240\355\063\013\164\276\040\040\304\147\154\360
\010\003\172\125\200\177\106\116\226\247\364\036\076\341\366\330
\011\341\063\144\053\143\327\062\136\237\371\300\173\017\170\157
\227\274\223\232\371\234\022\220\170\172\200\207\025\327\162\164
\234\125\164\170\261\272\341\156\160\004\272\117\240\272\150\303
\173\377\061\360\163\075\075\224\052\261\013\101\016\240\376\115
\210\145\153\171\063\264\327\002\003\001\000\001\243\102\060\100
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\035\006\003\125\035\016\004\026\004\024\355\104\031\300
\323\360\006\213\356\244\173\276\102\347\046\124\310\216\066\166
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\002\001\000\015\256\220\062\366\246\113\174\104\166\031\141
\036\047\050\315\136\124\357\045\274\343\010\220\371\051\327\256
\150\010\341\224\000\130\357\056\056\176\123\122\214\266\134\007
\352\210\272\231\213\120\224\327\202\200\337\141\011\000\223\255
\015\024\346\316\301\362\067\224\170\260\137\234\263\242\163\270
\217\005\223\070\315\215\076\260\270\373\300\317\261\362\354\055
\055\033\314\354\252\232\263\252\140\202\033\055\073\303\204\075
\127\212\226\036\234\165\270\323\060\315\140\010\203\220\323\216
\124\361\115\146\300\135\164\003\100\243\356\205\176\302\037\167
\234\006\350\301\247\030\135\122\225\355\311\335\045\236\155\372
\251\355\243\072\064\320\131\173\332\355\120\363\065\277\355\353
\024\115\061\307\140\364\332\361\207\234\342\110\342\306\305\067
\373\006\020\372\165\131\146\061\107\051\332\166\232\034\351\202
\256\357\232\271\121\367\210\043\232\151\225\142\074\345\125\200
\066\327\124\002\377\361\271\135\316\324\043\157\330\105\204\112
\133\145\357\211\014\335\024\247\040\313\030\245\045\264\015\371
\001\360\242\322\364\000\310\164\216\241\052\110\216\145\333\023
\304\342\045\027\175\353\276\207\133\027\040\124\121\223\112\123
\003\013\354\135\312\063\355\142\375\105\307\057\133\334\130\240
\200\071\346\372\327\376\023\024\246\355\075\224\112\102\164\324
\303\167\131\163\315\217\106\276\125\070\357\372\350\221\062\352
\227\130\004\042\336\070\303\314\274\155\311\063\072\152\012\151
\077\240\310\352\162\217\214\143\206\043\275\155\074\226\236\225
\340\111\114\252\242\271\052\033\234\066\201\170\355\303\350\106
\342\046\131\104\165\036\331\165\211\121\315\020\204\235\141\140
\313\135\371\227\042\115\216\230\346\343\177\366\133\273\256\315
\312\112\201\153\136\013\363\121\341\164\053\351\176\047\247\331
\231\111\116\370\245\200\333\045\017\034\143\142\212\311\063\147
\153\074\020\203\306\255\336\250\315\026\216\215\360\007\067\161

```
\237\362\253\374\101\365\301\213\354\000\067\135\011\345\116\200
\357\372\261\134\070\006\245\033\112\341\334\070\055\074\334\253
\037\220\032\325\112\234\356\321\160\154\314\356\364\127\370\030
\272\204\156\207
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "IdenTrust Commercial Root CA 1"

Issuer: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US

Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02

Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US

Not Valid Before: Thu Jan 16 18:12:23 2014

Not Valid After : Mon Jan 16 18:12:23 2034

Fingerprint (SHA-256):

5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE

Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "IdenTrust Commercial Root CA 1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\337\161\176\252\112\331\116\311\125\204\231\140\055\110\336\137
\274\360\072\045
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\263\076\167\163\165\356\240\323\343\176\111\143\111\131\273\307
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144
\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151
\141\154\040\122\157\157\164\040\103\101\040\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000
\000\002
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```
#
# Certificate "IdenTrust Public Sector Root CA 1"
#
# Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
# Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02
#
Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
# Not Valid Before: Thu Jan 16 17:53:32 2014
# Not Valid After : Mon Jan 16 17:53:32 2034
# Fingerprint (SHA-256):
30:D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F
# Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IdenTrust Public Sector Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061
END
CKA_ID UTF8 "0"
CKA_ISSUER
MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\012\001\102\200\000\000\001\105\043\317\106\174\000\000
\000\002
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\146\060\202\003\116\240\003\002\001\002\002\020\012
\001\102\200\000\000\001\105\043\317\106\174\000\000\000\002\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\115
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060
\020\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163
\164\061\052\060\050\006\003\125\004\003\023\041\111\144\145\156
\124\162\165\163\164\040\120\165\142\154\151\143\040\123\145\143
\164\157\162\040\122\157\157\164\040\103\101\040\061\060\036\027
\015\061\064\060\061\061\066\061\067\065\063\063\062\132\027\015
```

\063\064\060\061\061\066\061\067\065\063\063\062\132\060\115\061
\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060\020
\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163\164
\061\052\060\050\006\003\125\004\003\023\041\111\144\145\156\124
\162\165\163\164\040\120\165\142\154\151\143\040\123\145\143\164
\157\162\040\122\157\157\164\040\103\101\040\061\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\266\042\224
\374\244\110\257\350\107\153\012\373\047\166\344\362\077\212\073
\172\112\054\061\052\214\215\260\251\303\061\153\250\167\166\204
\046\266\254\201\102\015\010\353\125\130\273\172\370\274\145\175
\362\240\155\213\250\107\351\142\166\036\021\356\010\024\321\262
\104\026\364\352\320\372\036\057\136\333\313\163\101\256\274\000
\260\112\053\100\262\254\341\073\113\302\055\235\344\241\233\354
\032\072\036\360\010\263\320\344\044\065\007\237\234\264\311\122
\155\333\007\312\217\265\133\360\203\363\117\307\055\245\310\255
\313\225\040\244\061\050\127\130\132\344\215\033\232\253\236\015
\014\362\012\063\071\042\071\012\227\056\363\123\167\271\104\105
\375\204\313\066\040\201\131\055\232\157\155\110\110\141\312\114
\337\123\321\257\122\274\104\237\253\057\153\203\162\357\165\200
\332\006\063\033\135\310\332\143\306\115\315\254\146\061\315\321
\336\076\207\020\066\341\271\244\172\357\140\120\262\313\312\246
\126\340\067\257\253\064\023\071\045\350\071\146\344\230\172\252
\022\230\234\131\146\206\076\255\361\260\312\076\006\017\173\360
\021\113\067\240\104\155\173\313\250\214\161\364\325\265\221\066
\314\360\025\306\053\336\121\027\261\227\114\120\075\261\225\131
\174\005\175\055\041\325\000\277\001\147\242\136\173\246\134\362
\367\042\361\220\015\223\333\252\104\121\146\314\175\166\003\353
\152\250\052\070\031\227\166\015\153\212\141\371\274\366\356\166
\375\160\053\335\051\074\370\012\036\133\102\034\213\126\057\125
\033\034\241\056\265\307\026\346\370\252\074\222\216\151\266\001
\301\265\206\235\211\017\013\070\224\124\350\352\334\236\075\045
\274\123\046\355\325\253\071\252\305\100\114\124\253\262\264\331
\331\370\327\162\333\034\274\155\275\145\137\357\210\065\052\146
\057\356\366\263\145\360\063\215\174\230\101\151\106\017\103\034
\151\372\233\265\320\141\152\315\312\113\331\114\220\106\253\025
\131\241\107\124\051\056\203\050\137\034\302\242\253\162\027\000
\006\216\105\354\213\342\063\075\177\332\031\104\344\142\162\303
\337\042\306\362\126\324\335\137\225\162\355\155\137\367\110\003
\133\375\305\052\240\366\163\043\204\020\033\001\347\002\003\001
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\343\161\340\236\330\247\102\331\333\161\221\153\224\223
\353\303\243\321\024\243\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\002\001\000\107\372\335\012\260\021
\221\070\255\115\135\367\345\016\227\124\031\202\110\207\124\214
\252\144\231\330\132\376\210\001\305\130\245\231\261\043\124\043

\267\152\035\040\127\345\001\142\101\027\323\011\333\165\313\156
\124\220\165\376\032\237\201\012\302\335\327\367\011\320\133\162
\025\344\036\011\152\075\063\363\041\232\346\025\176\255\121\325
\015\020\355\175\102\300\217\356\300\232\010\325\101\326\134\016
\041\151\156\200\141\016\025\300\270\317\305\111\022\122\314\276
\072\314\324\056\070\005\336\065\375\037\157\270\200\150\230\075
\115\240\312\100\145\322\163\174\365\213\331\012\225\077\330\077
\043\155\032\321\052\044\031\331\205\263\027\357\170\156\251\130
\321\043\323\307\023\355\162\045\177\135\261\163\160\320\177\006
\227\011\204\051\200\141\035\372\136\377\163\254\240\343\211\270
\034\161\025\306\336\061\177\022\334\341\155\233\257\347\350\237
\165\170\114\253\106\073\232\316\277\005\030\135\115\025\074\026
\232\031\120\004\232\262\232\157\145\213\122\137\074\130\004\050
\045\300\146\141\061\176\271\340\165\271\032\250\201\326\162\027
\263\305\003\061\065\021\170\170\242\340\351\060\214\177\200\337
\130\337\074\272\047\226\342\200\064\155\343\230\323\144\047\254
\110\176\050\167\134\306\045\141\045\370\205\014\145\372\304\062
\057\245\230\005\344\370\013\147\026\026\306\202\270\062\031\371
\371\271\171\334\037\315\353\257\253\016\335\033\333\105\344\172
\347\002\342\225\135\374\151\360\123\151\141\225\165\171\013\136
\125\346\070\034\224\251\131\063\236\310\161\164\171\177\121\211
\266\310\152\270\060\310\152\070\303\156\236\341\067\026\352\005
\142\114\133\022\107\355\247\264\263\130\126\307\111\363\177\022
\150\011\061\161\360\155\370\116\107\373\326\205\356\305\130\100
\031\244\035\247\371\113\103\067\334\150\132\117\317\353\302\144
\164\336\264\025\331\364\124\124\032\057\034\327\227\161\124\220
\216\331\040\235\123\053\177\253\217\342\352\060\274\120\067\357
\361\107\265\175\174\054\004\354\150\235\264\111\104\020\364\162
\113\034\144\347\374\346\153\220\335\151\175\151\375\000\126\245
\267\254\266\255\267\312\076\001\357\234

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "IdenTrust Public Sector Root CA 1"

Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02

Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

Not Valid Before: Thu Jan 16 17:53:32 2014

Not Valid After : Mon Jan 16 17:53:32 2034

Fingerprint (SHA-256):

30:D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F

Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IdenTrust Public Sector Root CA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\272\051\101\140\167\230\077\364\363\357\362\061\005\073\056\352
\155\115\105\375
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\067\006\245\260\374\211\235\272\364\153\214\032\144\315\325\272
END
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\165\163\164\061\052\060\050\006\003\125\004\003\023\041\111\144
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\012\001\102\200\000\000\001\105\043\317\106\174\000\000
\000\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Entrust Root Certification Authority - G2"
#
# Issuer: CN=Entrust Root Certification Authority
- G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust,
Inc.",C=US
# Serial Number: 1246989352 (0x4a538c28)
# Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Not Valid Before: Tue Jul 07 17:25:54 2009
# Not Valid After : Sat Dec 07 17:55:54 2030
# Fingerprint (SHA-256):
43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39
# Fingerprint (SHA1): 8C:F4:27:FD:79:0C:3A:D1:66:06:8D:E8:1E:57:EF:BB:93:22:72:D4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123

```

\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\060\071\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\060\071\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\004\112\123\214\050

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\076\060\202\003\046\240\003\002\001\002\002\004\112
\123\214\050\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\201\276\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156\164
\162\165\163\164\054\040\111\156\143\056\061\050\060\046\006\003
\125\004\013\023\037\123\145\145\040\167\167\167\056\145\156\164
\162\165\163\164\056\156\145\164\057\154\145\147\141\154\055\164
\145\162\155\163\061\071\060\067\006\003\125\004\013\023\060\050
\143\051\040\062\060\060\071\040\105\156\164\162\165\163\164\054
\040\111\156\143\056\040\055\040\146\157\162\040\141\165\164\150
\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061
\062\060\060\006\003\125\004\003\023\051\105\156\164\162\165\163
\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141

\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055
\040\107\062\060\036\027\015\060\071\060\067\060\067\061\067\062
\065\065\064\132\027\015\063\060\061\062\060\067\061\067\065\065
\065\064\132\060\201\276\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156
\164\162\165\163\164\054\040\111\156\143\056\061\050\060\046\006
\003\125\004\013\023\037\123\145\145\040\167\167\167\056\145\156
\164\162\165\163\164\056\156\145\164\057\154\145\147\141\154\055
\164\145\162\155\163\061\071\060\067\006\003\125\004\013\023\060
\050\143\051\040\062\060\060\071\040\105\156\164\162\165\163\164
\054\040\111\156\143\056\040\055\040\146\157\162\040\141\165\164
\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171
\061\062\060\060\006\003\125\004\003\023\051\105\156\164\162\165
\163\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
\055\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\272\204\266\162\333\236\014\153\342\231\351
\060\001\247\166\352\062\270\225\101\032\311\332\141\116\130\162
\317\376\366\202\171\277\163\141\006\012\245\047\330\263\137\323
\105\116\034\162\326\116\062\362\162\212\017\367\203\031\320\152
\200\200\000\105\036\260\307\347\232\277\022\127\047\034\243\150
\057\012\207\275\152\153\016\136\145\363\034\167\325\324\205\215
\160\041\264\263\062\347\213\242\325\206\071\002\261\270\322\107
\316\344\311\111\304\073\247\336\373\124\175\127\276\360\350\156
\302\171\262\072\013\125\342\120\230\026\062\023\134\057\170\126
\301\302\224\263\362\132\344\047\232\237\044\327\306\354\320\233
\045\202\343\314\302\304\105\305\214\227\172\006\153\052\021\237
\251\012\156\110\073\157\333\324\021\031\102\367\217\007\277\365
\123\137\234\076\364\027\054\346\151\254\116\062\114\142\167\352
\267\350\345\273\064\274\031\213\256\234\121\347\267\176\265\123
\261\063\042\345\155\317\160\074\032\372\342\233\147\266\203\364
\215\245\257\142\114\115\340\130\254\144\064\022\003\370\266\215
\224\143\044\244\161\002\003\001\000\001\243\102\060\100\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\035\006\003\125\035\016\004\026\004\024\152\162\046\172\320\036
\357\175\347\073\151\121\324\154\215\237\220\022\146\253\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001
\001\000\171\237\035\226\306\266\171\077\042\215\207\323\207\003
\004\140\152\153\232\056\131\211\163\021\254\103\321\365\023\377
\215\071\053\300\362\275\117\160\214\251\057\352\027\304\013\124
\236\324\033\226\230\063\074\250\255\142\242\000\166\253\131\151
\156\006\035\176\304\271\104\215\230\257\022\324\141\333\012\031
\106\107\363\353\367\143\301\100\005\100\245\322\267\364\265\232
\066\277\251\210\166\210\004\125\004\053\234\207\177\032\067\074
\176\055\245\032\330\324\211\136\312\275\254\075\154\330\155\257
\325\363\166\017\315\073\210\070\042\235\154\223\232\304\075\277

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\202\033\145\077\246\017\135\252\374\345\262\025\312\265\255\306
\274\075\320\204\350\352\006\162\260\115\071\062\170\277\076\021
\234\013\244\235\232\041\363\360\233\013\060\170\333\301\334\207
\103\376\274\143\232\312\305\302\034\311\307\215\377\073\022\130
\010\346\266\075\354\172\054\116\373\203\226\316\014\074\151\207
\124\163\244\163\302\223\377\121\020\254\025\124\001\330\374\005
\261\211\241\177\164\203\232\111\327\334\116\173\212\110\157\213
\105\366
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Entrust Root Certification Authority - G2"

Issuer: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Serial Number: 1246989352 (0x4a538c28)

Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Not Valid Before: Tue Jul 07 17:25:54 2009

Not Valid After : Sat Dec 07 17:55:54 2030

Fingerprint (SHA-256):

43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39

Fingerprint (SHA1): 8C:F4:27:FD:79:0C:3A:D1:66:06:8D:E8:1E:57:EF:BB:93:22:72:D4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Entrust Root Certification Authority - G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\214\364\047\375\171\014\072\321\146\006\215\350\036\127\357\273
\223\042\162\324
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\113\342\311\221\226\145\014\364\016\132\223\222\240\012\376\262
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\060\071\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
```

```
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\004\112\123\214\050
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Entrust Root Certification Authority - EC1"

#

Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Serial Number:00:a6:8b:79:29:00:00:00:00:50:d0:91:f9

Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Not Valid Before: Tue Dec 18 15:25:36 2012

Not Valid After : Fri Dec 18 15:55:36 2037

Fingerprint (SHA-256):

02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5

#

Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Entrust Root Certification Authority - EC1"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105
\103\061
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END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105
\103\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\015\000\246\213\171\051\000\000\000\000\120\320\221\371

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\371\060\202\002\200\240\003\002\001\002\002\015\000
\246\213\171\051\000\000\000\000\120\320\221\371\060\012\006\010
\052\206\110\316\075\004\003\003\060\201\277\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004
\012\023\015\105\156\164\162\165\163\164\054\040\111\156\143\056
\061\050\060\046\006\003\125\004\013\023\037\123\145\145\040\167
\167\167\056\145\156\164\162\165\163\164\056\156\145\164\057\154
\145\147\141\154\055\164\145\162\155\163\061\071\060\067\006\003
\125\004\013\023\060\050\143\051\040\062\060\061\062\040\105\156
\164\162\165\163\164\054\040\111\156\143\056\040\055\040\146\157
\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145
\040\157\156\154\171\061\063\060\061\006\003\125\004\003\023\052
\105\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\040\055\040\105\103\061\060\036\027\015\063\067\061
\061\062\061\070\061\065\062\065\063\066\132\027\015\063\067\061
\062\061\070\061\065\065\065\063\066\132\060\201\277\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\026\060\024\006\003
\125\004\012\023\015\105\156\164\162\165\163\164\054\040\111\156
\143\056\061\050\060\046\006\003\125\004\013\023\037\123\145\145
\040\167\167\167\056\145\156\164\162\165\163\164\056\156\145\164
\057\154\145\147\141\154\055\164\145\162\155\163\061\071\060\067
\006\003\125\004\013\023\060\050\143\051\040\062\060\061\062\040
\105\156\164\162\165\163\164\054\040\111\156\143\056\040\055\040
\146\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165

\163\145\040\157\156\154\171\061\063\060\061\006\003\125\004\003
\023\052\105\156\164\162\165\163\164\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\105\103\061\060\166\060\020
\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042
\003\142\000\004\204\023\311\320\272\155\101\173\342\154\320\353
\125\137\146\002\032\044\364\133\211\151\107\343\270\302\175\361
\362\002\305\237\240\366\133\325\213\006\031\206\117\123\020\155
\007\044\047\241\240\370\325\107\031\141\114\175\312\223\047\352
\164\014\357\157\226\011\376\143\354\160\135\066\255\147\167\256
\311\235\174\125\104\072\242\143\121\037\365\343\142\324\251\107
\007\076\314\040\243\102\060\100\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\267\143\347\032\335\215\351\010\246\125\203\244
\340\152\120\101\145\021\102\111\060\012\006\010\052\206\110\316
\075\004\003\003\003\147\000\060\144\002\060\141\171\330\345\102
\107\337\034\256\123\231\027\266\157\034\175\341\277\021\224\321
\003\210\165\344\215\211\244\212\167\106\336\155\141\357\002\365
\373\265\337\314\376\116\377\376\251\346\247\002\060\133\231\327
\205\067\006\265\173\010\375\353\047\213\112\224\371\341\372\247
\216\046\010\350\174\222\150\155\163\330\157\046\254\041\002\270
\231\267\046\101\133\045\140\256\320\110\032\356\006

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Entrust Root Certification Authority - EC1"

Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Serial Number:00:a6:8b:79:29:00:00:00:00:50:d0:91:f9

Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Not Valid Before: Tue Dec 18 15:25:36 2012

Not Valid After : Fri Dec 18 15:55:36 2037

Fingerprint (SHA-256):

02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5

Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Entrust Root Certification Authority - EC1"

CKA_CERT_SHA1_HASH MULTILINE OCTAL

\040\330\006\100\337\233\045\365\022\045\072\021\352\367\131\212

\353\024\265\107


```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\266\176\035\360\130\305\111\154\044\073\075\355\230\030\355\274
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105
\103\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\000\246\213\171\051\000\000\000\000\120\320\221\371
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "CFCA EV ROOT"
#
# Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN
# Serial Number: 407555286 (0x184accd6)
# Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN
# Not Valid Before: Wed Aug 08 03:07:01 2012
#
# Not Valid After : Mon Dec 31 03:07:01 2029
# Fingerprint (SHA-256):
5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD
# Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CFCA EV ROOT"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061

```

\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040
\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101
\040\105\126\040\122\117\117\124

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040
\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101
\040\105\126\040\122\117\117\124

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\004\030\112\314\326

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\215\060\202\003\165\240\003\002\001\002\002\004\030
\112\314\326\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\126\061\013\060\011\006\003\125\004\006\023\002\103
\116\061\060\060\056\006\003\125\004\012\014\047\103\150\151\156
\141\040\106\151\156\141\156\143\151\141\154\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\061\025\060\023\006\003\125\004\003\014\014\103\106
\103\101\040\105\126\040\122\117\117\124\060\036\027\015\061\062
\060\070\060\070\060\063\060\067\060\061\132\027\015\062\071\061
\062\063\061\060\063\060\067\060\061\132\060\126\061\013\060\011
\006\003\125\004\006\023\002\103\116\061\060\060\056\006\003\125
\004\012\014\047\103\150\151\156\141\040\106\151\156\141\156\143
\151\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\025\060\023\006
\003\125\004\003\014\014\103\106\103\101\040\105\126\040\122\117
\117\124\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\327\135\153\315\020\077\037\005\131\325\005\115\067
\261\016\354\230\053\216\025\035\372\223\113\027\202\041\161\020
\122\327\121\144\160\026\302\125\151\115\216\025\155\237\277\014
\033\302\340\243\147\326\014\254\317\042\256\257\167\124\052\113
\114\212\123\122\172\303\356\056\336\263\161\045\301\351\135\075
\356\241\057\243\367\052\074\311\043\035\152\253\035\241\247\361
\363\354\240\325\104\317\025\317\162\057\035\143\227\350\231\371
\375\223\244\124\200\114\122\324\122\253\056\111\337\220\315\270
\137\276\077\336\241\312\115\040\324\045\350\204\051\123\267\261
\210\037\377\372\332\220\237\012\251\055\101\077\261\361\030\051
\356\026\131\054\064\111\032\250\006\327\250\210\322\003\162\172

\062\342\352\150\115\156\054\226\145\173\312\131\372\362\342\335
\356\060\054\373\314\106\254\304\143\353\157\177\066\053\064\163
\022\224\177\337\314\046\236\361\162\135\120\145\131\217\151\263
\207\136\062\157\303\030\212\265\225\217\260\172\067\336\132\105
\073\307\066\341\357\147\321\071\323\227\133\163\142\031\110\055
\207\034\006\373\164\230\040\111\163\360\005\322\033\261\240\243
\267\033\160\323\210\151\271\132\326\070\364\142\334\045\213\170
\277\370\350\176\270\134\311\225\117\137\247\055\271\040\153\317
\153\335\365\015\364\202\267\364\262\146\056\020\050\366\227\132
\173\226\026\217\001\031\055\154\156\177\071\130\006\144\203\001
\203\203\303\115\222\335\062\306\207\244\067\351\026\316\252\055
\150\257\012\201\145\072\160\301\233\255\115\155\124\312\052\055
\113\205\033\263\200\346\160\105\015\153\136\065\360\177\073\270
\234\344\004\160\211\022\045\223\332\012\231\042\140\152\143\140
\116\166\006\230\116\275\203\255\035\130\212\045\205\322\307\145
\036\055\216\306\337\266\306\341\177\212\004\041\025\051\164\360
\076\234\220\235\014\056\361\212\076\132\252\014\011\036\307\325
\074\243\355\227\303\036\064\372\070\371\010\016\343\300\135\053
\203\321\126\152\311\266\250\124\123\056\170\062\147\075\202\177
\164\320\373\341\266\005\140\271\160\333\216\013\371\023\130\157
\161\140\020\122\020\271\301\101\011\357\162\037\147\061\170\377
\226\005\215\002\003\001\000\001\243\143\060\141\060\037\006\003
\125\035\043\004\030\060\026\200\024\343\376\055\375\050\320\013
\265\272\266\242\304\277\006\252\005\214\223\373\057\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035
\006\003\125\035\016\004\026\004\024\343\376\055\375\050\320\013
\265\272\266\242\304\277\006\252\005\214\223\373\057\060\015\006
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001
\000\045\306\272\153\353\207\313\336\202\071\226\075\360\104\247
\153\204\163\003\336\235\053\117\272\040\177\274\170\262\317\227
\260\033\234\363\327\171\056\365\110\266\322\373\027\210\346\323
\172\077\355\123\023\320\342\057\152\171\313\000\043\050\346\036
\067\127\065\211\204\302\166\117\064\066\255\147\303\316\101\006
\210\305\367\356\330\032\270\326\013\177\120\377\223\252\027\113
\214\354\355\122\140\262\244\006\352\116\353\364\153\031\375\353
\365\032\340\045\052\232\334\307\101\066\367\310\164\005\204\071
\225\071\326\013\073\244\047\372\010\330\134\036\370\004\140\122
\021\050\050\003\377\357\123\146\000\245\112\064\026\146\174\375
\011\244\256\236\147\032\157\101\013\153\006\023\233\217\206\161
\005\264\057\215\211\146\063\051\166\124\232\021\370\047\372\262
\077\221\340\316\015\033\363\060\032\255\277\042\135\033\323\277
\045\005\115\341\222\032\177\231\237\074\104\223\312\324\100\111
\154\200\207\327\004\072\303\062\122\065\016\126\370\245\335\175
\304\213\015\021\037\123\313\036\262\027\266\150\167\132\340\324
\313\310\007\256\365\072\056\216\067\267\320\001\113\103\051\167
\214\071\227\217\202\132\370\121\345\211\240\030\347\150\177\135
\012\056\373\243\107\016\075\246\043\172\306\001\307\217\310\136

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\277\155\200\126\276\212\044\272\063\352\237\341\062\021\236\361
\322\117\200\366\033\100\257\070\236\021\120\171\163\022\022\315
\346\154\235\054\210\162\074\060\201\006\221\042\352\131\255\332
\031\056\042\302\215\271\214\207\340\146\274\163\043\137\041\144
\143\200\110\365\240\074\030\075\224\310\110\101\035\100\272\136
\376\376\126\071\241\310\317\136\236\031\144\106\020\332\027\221
\267\005\200\254\213\231\222\175\347\242\330\007\013\066\047\347
\110\171\140\212\303\327\023\134\370\162\100\337\112\313\317\231
\000\012\000\013\021\225\332\126\105\003\210\012\237\147\320\325
\171\261\250\215\100\155\015\302\172\100\372\363\137\144\107\222
\313\123\271\273\131\316\117\375\320\025\123\001\330\337\353\331
\346\166\357\320\043\273\073\251\171\263\325\002\051\315\211\243
\226\017\112\065\347\116\102\300\165\315\007\317\346\054\353\173
\056
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "CFCA EV ROOT"

Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

Serial Number: 407555286 (0x184accd6)

Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN

Not Valid Before: Wed Aug 08 03:07:01 2012

Not Valid After : Mon Dec 31 03:07:01 2029

Fingerprint (SHA-256):

5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD

Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CFCA EV ROOT"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\342\270\051\113\125\204\253\153\130\302\220\106\154\254\077\270
\071\217\204\203
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\164\341\266\355\046\172\172\104\060\063\224\253\173\047\201\060
```

CKA_ISSUER MULTILINE_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\060\060\056\006\003\125\004\012\014\047\103\150\151\156\141\040
\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101
```

```

\040\105\126\040\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\030\112\314\326
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "OISTE WISeKey Global Root GB CA"
#
# Issuer: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
# Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0
#
# Subject: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
# Not Valid Before: Mon Dec 01 15:00:32 2014
# Not Valid After : Thu Dec 01 15:10:31 2039
# Fingerprint (SHA-256):
6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6
# Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GB CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366
\302\300

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\265\060\202\002\235\240\003\002\001\002\002\020\166
\261\040\122\164\360\205\207\106\263\370\043\032\366\302\300\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\155
\061\013\060\011\006\003\125\004\006\023\002\103\110\061\020\060
\016\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061
\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040
\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162
\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111
\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142
\141\154\040\122\157\157\164\040\107\102\040\103\101\060\036\027
\015\061\064\061\062\060\061\061\065\060\060\063\062\132\027\015
\063\071\061\062\060\061\061\065\061\060\063\061\132\060\155\061
\013\060\011\006\003\125\004\006\023\002\103\110\061\020\060\016
\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061\042
\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106
\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163
\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123
\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141
\154\040\122\157\157\164\040\107\102\040\103\101\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\330\027\267
\034\112\044\052\326\227\261\312\342\036\373\175\070\357\230\365
\262\071\230\116\047\270\021\135\173\322\045\224\210\202\025\046
\152\033\061\273\250\133\041\041\053\330\017\116\237\132\361\261
\132\344\171\326\062\043\053\341\123\314\231\105\134\173\117\255
\274\277\207\112\013\113\227\132\250\366\110\354\175\173\015\315
\041\006\337\236\025\375\101\212\110\267\040\364\241\172\033\127
\324\135\120\377\272\147\330\043\231\037\310\077\343\336\377\157
\133\167\261\153\156\270\311\144\367\341\312\101\106\016\051\161
\320\271\043\374\311\201\137\116\367\157\337\277\204\255\163\144
\273\267\102\216\151\366\324\166\035\176\235\247\270\127\212\121
\147\162\327\324\250\270\225\124\100\163\003\366\352\364\353\376
\050\102\167\077\235\043\033\262\266\075\200\024\007\114\056\117
\367\325\012\026\015\275\146\103\067\176\043\103\171\303\100\206
\365\114\051\332\216\232\255\015\245\004\207\210\036\205\343\351
\123\325\233\310\213\003\143\170\353\340\031\112\156\273\057\153
\063\144\130\223\255\151\277\217\033\357\202\110\307\002\003\001
\000\001\243\121\060\117\060\013\006\003\125\035\017\004\004\003
\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\065
\017\310\066\143\136\342\243\354\371\073\146\025\316\121\122\343
\221\232\075\060\020\006\011\053\006\001\004\001\202\067\025\001
\004\003\002\001\000\060\015\006\011\052\206\110\206\367\015\001

```
\001\013\005\000\003\202\001\001\000\100\114\373\207\262\231\201
\220\176\235\305\260\260\046\315\210\173\053\062\215\156\270\041
\161\130\227\175\256\067\024\257\076\347\367\232\342\175\366\161
\230\231\004\252\103\164\170\243\343\111\141\076\163\214\115\224
\340\371\161\304\266\026\016\123\170\037\326\242\207\057\002\071
\201\051\074\257\025\230\041\060\376\050\220\000\214\321\341\313
\372\136\310\375\370\020\106\073\242\170\102\221\027\164\125\012
\336\120\147\115\146\321\247\377\375\331\300\265\250\243\212\316
\146\365\017\103\315\247\053\127\173\143\106\152\252\056\122\330
\364\355\341\155\255\051\220\170\110\272\341\043\252\243\211\354
\265\253\226\300\264\113\242\035\227\236\172\362\156\100\161\337
\150\361\145\115\316\174\005\337\123\145\251\245\360\261\227\004
\160\025\106\003\230\324\322\277\124\264\240\130\175\122\157\332
\126\046\142\324\330\333\211\061\157\034\360\042\302\323\142\034
\065\315\114\151\025\124\032\220\230\336\353\036\137\312\167\307
\313\216\075\103\151\234\232\130\320\044\073\337\033\100\226\176
\065\255\201\307\116\161\272\210\023
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "OISTE WISEKey Global Root GB CA"

Issuer: CN=OISTE WISEKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0

Subject:

CN=OISTE WISEKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH

Not Valid Before: Mon Dec 01 15:00:32 2014

Not Valid After : Thu Dec 01 15:10:31 2039

Fingerprint (SHA-256):

6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6

Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "OISTE WISEKey Global Root GB CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\017\371\100\166\030\323\327\152\113\230\360\250\065\236\014\375
\047\254\314\355
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\244\353\271\141\050\056\267\057\230\260\065\046\220\231\121\035
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
```

```
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366
\302\300
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "SZAFIR ROOT CA2"

#

Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4

Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

Not Valid Before: Mon Oct 19 07:43:30 2015

Not Valid After : Fri Oct 19 07:43:30 2035

Fingerprint (SHA-256):

A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE

#

Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SZAFIR ROOT CA2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
```


\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001
\353\055\334\344\326\344

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\162\060\202\002\132\240\003\002\001\002\002\024\076
\212\135\007\354\125\322\062\325\267\343\266\137\001\353\055\334
\344\326\344\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\121\061\013\060\011\006\003\125\004\006\023\002\120
\114\061\050\060\046\006\003\125\004\012\014\037\113\162\141\152
\157\167\141\040\111\172\142\141\040\122\157\172\154\151\143\172
\145\156\151\157\167\141\040\123\056\101\056\061\030\060\026\006
\003\125\004\003\014\017\123\132\101\106\111\122\040\122\117\117
\124\040\103\101\062\060\036\027\015\061\065\061\060\061\071\060
\067\064\063\063\060\132\027\015\063\065\061\060\061\071\060\067
\064\063\063\060\132\060\121\061\013\060\011\006\003\125\004\006
\023\002\120\114\061\050\060\046\006\003\125\004\012\014\037\113
\162\141\152\157\167\141\040\111\172\142\141\040\122\157\172\154
\151\143\172\145\156\151\157\167\141\040\123\056\101\056\061\030
\060\026\006\003\125\004\003\014\017\123\132\101\106\111\122\040
\122\117\117\124\040\103\101\062\060\202\001\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\267\274\076\120\250\113\315
\100\265\316\141\347\226\312\264\241\332\014\042\260\372\265\173
\166\000\167\214\013\317\175\250\206\314\046\121\344\040\075\205
\014\326\130\343\347\364\052\030\235\332\321\256\046\356\353\123
\334\364\220\326\023\112\014\220\074\303\364\332\322\216\015\222
\072\334\261\261\377\070\336\303\272\055\137\200\271\002\275\112
\235\033\017\264\303\302\301\147\003\335\334\033\234\075\263\260
\336\000\036\250\064\107\273\232\353\376\013\024\275\066\204\332
\015\040\277\372\133\313\251\026\040\255\071\140\356\057\165\266
\347\227\234\371\076\375\176\115\157\115\057\357\210\015\152\372
\335\361\075\156\040\245\240\022\264\115\160\271\316\327\162\073
\211\223\247\200\204\034\047\111\162\111\265\377\073\225\236\301
\314\310\001\354\350\016\212\012\226\347\263\246\207\345\326\371
\005\053\015\227\100\160\074\272\254\165\132\234\325\115\235\002
\012\322\113\233\146\113\106\007\027\145\255\237\154\210\000\334
\042\211\340\341\144\324\147\274\061\171\141\074\273\312\101\315
\134\152\000\310\074\070\216\130\257\002\003\001\000\001\243\102
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\035\006\003\125\035\016\004\026\004\024\056\026
\251\112\030\265\313\314\365\157\120\363\043\137\370\135\347\254
\360\310\060\015\006\011\052\206\110\206\367\015\001\001\013\005

```
\000\003\202\001\001\000\265\163\370\003\334\131\133\035\166\351
\243\052\173\220\050\262\115\300\063\117\252\232\261\324\270\344
\047\377\251\226\231\316\106\340\155\174\114\242\070\244\006\160
\360\364\101\021\354\077\107\215\077\162\207\371\073\375\244\157
\053\123\000\340\377\071\271\152\007\016\353\035\034\366\242\162
\220\313\202\075\021\202\213\322\273\237\052\257\041\346\143\206
\235\171\031\357\367\273\014\065\220\303\212\355\117\017\365\314
\022\331\244\076\273\240\374\040\225\137\117\046\057\021\043\203
\116\165\007\017\277\233\321\264\035\351\020\004\376\312\140\217
\242\114\270\255\317\341\220\017\315\256\012\307\135\173\267\120
\322\324\141\372\325\025\333\327\237\207\121\124\353\245\343\353
\311\205\240\045\040\067\373\216\316\014\064\204\341\074\201\262
\167\116\103\245\210\137\206\147\241\075\346\264\134\141\266\076
\333\376\267\050\305\242\007\256\265\312\312\215\052\022\357\227
\355\302\060\244\311\052\172\373\363\115\043\033\231\063\064\240
\056\365\251\013\077\324\135\341\317\204\237\342\031\302\137\212
\326\040\036\343\163\267
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL

CK_FALSE

Trust for "SZAFIR ROOT CA2"

Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4

Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL

Not Valid Before: Mon Oct 19 07:43:30 2015

Not Valid After : Fri Oct 19 07:43:30 2035

Fingerprint (SHA-256):

A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE

Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SZAFIR ROOT CA2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\342\122\372\225\077\355\333\044\140\275\156\050\363\234\314\317
\136\263\077\336
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\021\144\301\211\260\044\261\214\261\007\176\211\236\121\236\231
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
```

```
\141\040\111\172\142\141\040\122\157\172\154\151\143\172\145\156
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001
\353\055\334\344\326\344
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Certum Trusted Network CA 2"

#

Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9

Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

Not Valid Before:

Thu Oct 06 08:39:56 2011

Not Valid After : Sat Oct 06 08:39:56 2046

Fingerprint (SHA-256):

B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04

Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certum Trusted Network CA 2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022
\215\351

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\322\060\202\003\272\240\003\002\001\002\002\020\041
\326\320\112\117\045\017\311\062\067\374\252\136\022\215\351\060
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060\201
\200\061\013\060\011\006\003\125\004\006\023\002\120\114\061\042
\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164\157
\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\044\060\042\006
\003\125\004\003\023\033\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101\040
\062\060\042\030\017\062\060\061\061\061\060\060\066\060\070\063
\071\065\066\132\030\017\062\060\064\066\061\060\060\066\060\070
\063\071\065\066\132\060\201\200\061\013\060\011\006\003\125\004
\006\023\002\120\114\061\042\060\040\006\003\125\004\012\023\031
\125\156\151\172\145\164\157\040\124\145\143\150\156\157\154\157
\147\151\145\163\040\123\056\101\056\061\047\060\045\006\003\125
\004\013\023\036\103\145\162\164\165\155\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\061\044\060\042\006\003\125\004\003\023\033\103\145\162
\164\165\155\040\124\162\165\163\164\145\144\040\116\145\164\167
\157\162\153\040\103\101\040\062\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\275\371\170\370\346\325\200
\014\144\235\206\033\226\144\147\077\042\072\036\165\001\175\357
\373\134\147\214\311\314\134\153\251\221\346\271\102\345\040\113
\233\332\233\173\271\231\135\331\233\200\113\327\204\100\053\047
\323\350\272\060\273\076\011\032\247\111\225\357\053\100\044\302
\227\307\247\356\233\045\357\250\012\000\227\205\132\252\235\334
\051\311\342\065\007\353\160\115\112\326\301\263\126\270\241\101
\070\233\321\373\061\177\217\340\137\341\261\077\017\216\026\111

\140\327\006\215\030\371\252\046\020\253\052\323\320\321\147\215
\033\106\276\107\060\325\056\162\321\305\143\332\347\143\171\104
\176\113\143\044\211\206\056\064\077\051\114\122\213\052\247\300
\342\221\050\211\271\300\133\371\035\331\347\047\255\377\232\002
\227\301\306\120\222\233\002\054\275\251\271\064\131\012\277\204
\112\377\337\376\263\237\353\331\236\340\230\043\354\246\153\167
\026\052\333\314\255\073\034\244\207\334\106\163\136\031\142\150
\105\127\344\220\202\102\273\102\326\360\141\340\301\243\075\146
\243\135\364\030\356\210\311\215\027\105\051\231\062\165\002\061
\356\051\046\310\153\002\346\265\142\105\177\067\025\132\043\150
\211\324\076\336\116\047\260\360\100\014\274\115\027\313\115\242
\263\036\320\006\132\335\366\223\317\127\165\231\365\372\206\032
\147\170\263\277\226\376\064\334\275\347\122\126\345\263\345\165
\173\327\101\221\005\334\135\151\343\225\015\103\271\374\203\226
\071\225\173\154\200\132\117\023\162\306\327\175\051\172\104\272
\122\244\052\325\101\106\011\040\376\042\240\266\133\060\215\274
\211\014\325\327\160\370\207\122\375\332\357\254\121\056\007\263
\116\376\320\011\332\160\357\230\372\126\346\155\333\265\127\113
\334\345\054\045\025\310\236\056\170\116\370\332\234\236\206\054
\312\127\363\032\345\310\222\213\032\202\226\172\303\274\120\022
\151\330\016\132\106\213\072\353\046\372\043\311\266\260\201\276
\102\000\244\370\326\376\060\056\307\322\106\366\345\216\165\375
\362\314\271\320\207\133\314\006\020\140\273\203\065\267\136\147
\336\107\354\231\110\361\244\241\025\376\255\214\142\216\071\125
\117\071\026\271\261\143\235\377\267\002\003\001\000\001\243\102
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\266\241
\124\071\002\303\240\077\216\212\274\372\324\370\034\246\321\072
\016\375\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\015\006\011\052\206\110\206\367\015\001\001\015\005
\000\003\202\002\001\000\161\245\016\316\344\351\277\077\070\325
\211\132\304\002\141\373\114\305\024\027\055\213\117\123\153\020
\027\374\145\204\307\020\111\220\336\333\307\046\223\210\046\157
\160\326\002\136\071\240\367\217\253\226\265\245\023\134\201\024
\155\016\201\202\021\033\212\116\306\117\245\335\142\036\104\337
\011\131\364\133\167\013\067\351\213\040\306\370\012\116\056\130
\034\353\063\320\317\206\140\311\332\373\200\057\236\114\140\204
\170\075\041\144\326\373\101\037\030\017\347\311\165\161\275\275
\134\336\064\207\076\101\260\016\366\271\326\077\011\023\226\024
\057\336\232\035\132\271\126\316\065\072\260\137\160\115\136\343
\051\361\043\050\162\131\266\253\302\214\146\046\034\167\054\046
\166\065\213\050\247\151\240\371\073\365\043\335\205\020\164\311
\220\003\126\221\347\257\272\107\324\022\227\021\042\343\242\111
\224\154\347\267\224\113\272\055\244\332\063\213\114\246\104\377
\132\074\306\035\144\330\265\061\344\246\074\172\250\127\013\333
\355\141\032\313\361\316\163\167\143\244\207\157\114\121\070\326
\344\137\307\237\266\201\052\344\205\110\171\130\136\073\370\333
\002\202\147\301\071\333\303\164\113\075\066\036\371\051\223\210

\150\133\250\104\031\041\360\247\350\201\015\054\350\223\066\264
\067\262\312\260\033\046\172\232\045\037\232\232\200\236\113\052
\077\373\243\232\376\163\062\161\302\236\306\162\341\212\150\047
\361\344\017\264\304\114\245\141\223\370\227\020\007\052\060\045
\251\271\310\161\270\357\150\314\055\176\365\340\176\017\202\250
\157\266\272\154\203\103\167\315\212\222\027\241\236\133\170\026
\075\105\342\063\162\335\341\146\312\231\323\311\305\046\375\015
\150\004\106\256\266\331\233\214\276\031\276\261\306\362\031\343
\134\002\312\054\330\157\112\007\331\311\065\332\100\165\362\304
\247\031\157\236\102\020\230\165\346\225\213\140\274\355\305\022
\327\212\316\325\230\134\126\226\003\305\356\167\006\065\377\317
\344\356\077\023\141\356\333\332\055\205\360\315\256\235\262\030
\011\105\303\222\241\162\027\374\107\266\240\013\054\361\304\336
\103\150\010\152\137\073\360\166\143\373\314\006\054\246\306\342
\016\265\271\276\044\217

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

#

Trust for "Certum Trusted Network CA 2"

Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL

Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9

Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL

Not Valid Before: Thu Oct 06 08:39:56 2011

Not Valid After : Sat Oct 06 08:39:56 2046

Fingerprint (SHA-256):

B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04

Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certum Trusted Network CA 2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\323\335\110\076\053\277\114\005\350\257\020\365\372\166\046\317
\323\334\060\222

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\155\106\236\331\045\155\010\043\133\136\164\175\036\047\333\362

END

CKA_ISSUER

MULTILINE_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114

```
\061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145
\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040
\123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103
\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060
\042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124
\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103
\101\040\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022
\215\351
```

END

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

#

Certificate "Hellenic Academic and Research Institutions RootCA 2015"

#

Issuer: CN=Hellenic

Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research Institutions Cert.
Authority,L=Athens,C=GR

Serial Number: 0 (0x0)

Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR

Not Valid Before: Tue Jul 07 10:11:21 2015

Not Valid After : Sat Jun 30 10:11:21 2040

Fingerprint (SHA-256):

A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36

Fingerprint (SHA1): 01:0C:06:95:A6:98:19:14:FF:BF:5F:C6:B0:B6:95:EA:29:E9:12:A6

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003
\023\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
```

```
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157
\157\164\103\101\040\062\060\061\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003
\023\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157
\157\164\103\101\040\062\060\061\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\013\060\202\003\363\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156\163
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\065\060\036\027\015\061\065\060\067
\060\067\061\060\061\061\062\061\132\027\015\064\060\060\066\063
\060\061\060\061\061\062\061\132\060\201\246\061\013\060\011\006
\003\125\004\006\023\002\107\122\061\017\060\015\006\003\125\004
\007\023\006\101\164\150\145\156\163\061\104\060\102\006\003\125
\004\012\023\073\110\145\154\154\145\156\151\143\040\101\143\141
\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162
\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163\040
\103\145\162\164\056\040\101\165\164\150\157\162\151\164\171\061
\100\060\076\006\003\125\004\003\023\067\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\122\157\157\164\103\101\040\062\060\061
```


\065\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\302\370\251\077\033\211\374\074\074\004\135\075\220\066
\260\221\072\171\074\146\132\357\155\071\001\111\032\264\267\317
\177\115\043\123\267\220\000\343\023\052\050\246\061\361\221\000
\343\050\354\256\041\101\316\037\332\375\175\022\133\001\203\017
\271\260\137\231\341\362\022\203\200\115\006\076\337\254\257\347
\241\210\153\061\257\360\213\320\030\063\270\333\105\152\064\364
\002\200\044\050\012\002\025\225\136\166\052\015\231\072\024\133
\366\313\313\123\274\023\115\001\210\067\224\045\033\102\274\042
\330\216\243\226\136\072\331\062\333\076\350\360\020\145\355\164
\341\057\247\174\257\047\064\273\051\175\233\266\317\011\310\345
\323\012\374\210\145\145\164\012\334\163\034\134\315\100\261\034
\324\266\204\214\114\120\317\150\216\250\131\256\302\047\116\202
\242\065\335\024\364\037\377\262\167\325\207\057\252\156\175\044
\047\347\306\313\046\346\345\376\147\007\143\330\105\015\335\072
\131\145\071\130\172\222\231\162\075\234\204\136\210\041\270\325
\364\054\374\331\160\122\117\170\270\275\074\053\213\225\230\365
\263\321\150\317\040\024\176\114\134\137\347\213\345\365\065\201
\031\067\327\021\010\267\146\276\323\112\316\203\127\000\072\303
\201\370\027\313\222\066\135\321\243\330\165\033\341\213\047\352
\172\110\101\375\105\031\006\255\047\231\116\301\160\107\335\265
\237\201\123\022\345\261\214\110\135\061\103\027\343\214\306\172
\143\226\113\051\060\116\204\116\142\031\136\074\316\227\220\245
\177\001\353\235\340\370\213\211\335\045\230\075\222\266\176\357
\331\361\121\121\175\055\046\310\151\131\141\340\254\152\270\052
\066\021\004\172\120\275\062\204\276\057\334\162\325\327\035\026
\107\344\107\146\040\077\364\226\305\257\216\001\172\245\017\172
\144\365\015\030\207\331\256\210\325\372\204\301\072\300\151\050
\055\362\015\150\121\252\343\245\167\306\244\220\016\241\067\213
\061\043\107\301\011\010\353\156\367\170\233\327\202\374\204\040
\231\111\031\266\022\106\261\373\105\125\026\251\243\145\254\234
\007\017\352\153\334\037\056\006\162\354\206\210\022\344\055\333
\137\005\057\344\360\003\323\046\063\347\200\302\315\102\241\027
\064\013\002\003\001\000\001\243\102\060\100\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003
\125\035\016\004\026\004\024\161\025\147\310\310\311\275\165\135
\162\320\070\030\152\235\363\161\044\124\013\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\165
\273\155\124\113\252\020\130\106\064\362\142\327\026\066\135\010
\136\325\154\310\207\275\264\056\106\362\061\370\174\352\102\265
\223\026\125\334\241\014\022\240\332\141\176\017\130\130\163\144
\162\307\350\105\216\334\251\362\046\077\306\171\214\261\123\010
\063\201\260\126\023\276\346\121\134\330\233\012\117\113\234\126
\123\002\351\117\366\015\140\352\115\102\125\350\174\033\041\041
\323\033\072\314\167\362\270\220\361\150\307\371\132\376\372\055
\364\277\311\365\105\033\316\070\020\052\067\212\171\243\264\343

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\011\154\205\206\223\377\211\226\047\170\201\217\147\343\106\164
\124\216\331\015\151\342\112\364\115\164\003\377\262\167\355\225
\147\227\344\261\305\253\277\152\043\350\324\224\342\104\050\142
\304\113\342\360\330\342\051\153\032\160\176\044\141\223\173\117
\003\062\045\015\105\044\053\226\264\106\152\277\112\013\367\232
\217\301\254\032\305\147\363\157\064\322\372\163\143\214\357\026
\260\250\244\106\052\370\353\022\354\162\264\357\370\053\176\214
\122\300\213\204\124\371\057\076\343\125\250\334\146\261\331\341
\137\330\263\214\131\064\131\244\253\117\154\273\037\030\333\165
\253\330\313\222\315\224\070\141\016\007\006\037\113\106\020\361
\025\276\215\205\134\073\112\053\201\171\017\264\151\237\111\120
\227\115\367\016\126\135\300\225\152\302\066\303\033\150\311\365
\052\334\107\232\276\262\316\305\045\350\372\003\271\332\371\026
\156\221\204\365\034\050\310\374\046\314\327\034\220\126\247\137
\157\072\004\274\315\170\211\013\216\017\057\243\252\117\242\033
\022\075\026\010\100\017\361\106\114\327\252\173\010\301\012\365
\155\047\336\002\217\312\303\265\053\312\351\353\310\041\123\070
\245\314\073\330\167\067\060\242\117\331\157\321\362\100\255\101
\172\027\305\326\112\065\211\267\101\325\174\206\177\125\115\203
\112\245\163\040\300\072\257\220\361\232\044\216\331\216\161\312
\173\270\206\332\262\217\231\076\035\023\015\022\021\356\324\253
\360\351\025\166\002\344\340\337\252\040\036\133\141\205\144\100
\251\220\227\015\255\123\322\132\035\207\152\000\227\145\142\264
\276\157\152\247\365\054\102\355\062\255\266\041\236\276\274
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Hellenic Academic and Research Institutions RootCA 2015"

Issuer: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR

Serial Number: 0 (0x0)

Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR

Not Valid Before: Tue Jul 07 10:11:21 2015

Not Valid After : Sat Jun 30 10:11:21 2040

Fingerprint (SHA-256):

A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36

Fingerprint (SHA1): 01:0C:06:95:A6:98:19:14:FF:BF:5F:C6:B0:B6:95:EA:29:E9:12:A6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\001\014\006\225\246\230\031\024\377\277\137\306\260\266\225\352
```

```

\051\351\022\246
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\312\377\342\333\003\331\313\113\351\017\255\204\375\173\030\316
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003
\023\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157
\157\164\103\101\040\062\060\061\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Hellenic Academic and Research Institutions ECC RootCA 2015"
#
#
# Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR
# Serial Number: 0 (0x0)
# Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and
Research Institutions Cert. Authority,L=Athens,C=GR
# Not Valid Before: Tue Jul 07 10:37:12 2015
# Not Valid After : Sat Jun 30 10:37:12 2040
# Fingerprint (SHA-256):
44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33
# Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions ECC RootCA 2015"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```

\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103
\103\040\122\157\157\164\103\101\040\062\060\061\065

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103
\103\040\122\157\157\164\103\101\040\062\060\061\065

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\303\060\202\002\112\240\003\002\001\002\002\001\000
\060\012\006\010\052\206\110\316\075\004\003\002\060\201\252\061
\013\060\011\006\003\125\004\006\023\002\107\122\061\017\060\015
\006\003\125\004\007\023\006\101\164\150\145\156\163\061\104\060
\102\006\003\125\004\012\023\073\110\145\154\154\145\156\151\143
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151
\157\156\163\040\103\145\162\164\056\040\101\165\164\150\157\162
\151\164\171\061\104\060\102\006\003\125\004\003\023\073\110\145
\154\154\145\156\151\143\040\101\143\141\144\145\155\151\143\040
\141\156\144\040\122\145\163\145\141\162\143\150\040\111\156\163
\164\151\164\165\164\151\157\156\163\040\105\103\103\040\122\157
\157\164\103\101\040\062\060\061\065\060\036\027\015\061\065\060
\067\060\067\061\060\063\067\061\062\132\027\015\064\060\060\066
\063\060\061\060\063\067\061\062\132\060\201\252\061\013\060\011
\006\003\125\004\006\023\002\107\122\061\017\060\015\006\003\125

\004\007\023\006\101\164\150\145\156\163\061\104\060\102\006\003
\125\004\012\023\073\110\145\154\154\145\156\151\143\040\101\143
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163
\040\103\145\162\164\056\040\101\165\164\150\157\162\151\164\171
\061\104\060\102\006\003\125\004\003\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\105\103\103\040\122\157\157\164\103
\101\040\062\060\061\065\060\166\060\020\006\007\052\206\110\316
\075\002\001\006\005\053\201\004\000\042\003\142\000\004\222\240
\101\350\113\202\204\134\342\370\061\021\231\206\144\116\011\045
\057\235\101\057\012\256\065\117\164\225\262\121\144\153\215\153
\346\077\160\225\360\005\104\107\246\162\070\120\166\225\002\132
\216\256\050\236\371\055\116\231\357\054\110\157\114\045\051\350
\321\161\133\337\035\301\165\067\264\327\372\173\172\102\234\152
\012\126\132\174\151\013\252\200\011\044\154\176\301\106\243\102
\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\035\006\003\125\035\016\004\026\004\024\264\042
\013\202\231\044\001\016\234\273\344\016\375\277\373\227\040\223
\231\052\060\012\006\010\052\206\110\316\075\004\003\002\003\147
\000\060\144\002\060\147\316\026\142\070\242\254\142\105\247\251
\225\044\300\032\047\234\062\073\300\300\325\272\251\347\370\004
\103\123\205\356\122\041\336\235\365\045\203\076\236\130\113\057
\327\147\023\016\041\002\060\005\341\165\001\336\150\355\052\037
\115\114\011\010\015\354\113\255\144\027\050\347\165\316\105\145
\162\041\027\313\042\101\016\214\023\230\070\232\124\155\233\312
\342\174\352\002\130\042\221

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "Hellenic Academic and Research Institutions ECC RootCA 2015"

Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority,L=Athens,C=GR

Serial Number: 0 (0x0)

Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and
Research Institutions Cert. Authority,L=Athens,C=GR

Not Valid Before: Tue Jul 07 10:37:12 2015

Not Valid After : Sat Jun 30 10:37:12 2040

Fingerprint (SHA-256):

44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33

#

Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions ECC RootCA 2015"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\237\361\161\215\222\325\232\363\175\164\227\264\274\157\204\150
\013\272\266\146
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\201\345\264\027\353\302\365\341\113\015\101\173\111\222\376\357
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103
\103\040\122\157\157\164\103\101\040\062\060\061\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ISRG Root X1"
#
# Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US
# Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00
# Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US
# Not Valid Before: Thu Jun 04 11:04:38 2015
# Not Valid After : Mon Jun 04 11:04:38 2035
# Fingerprint (SHA-256):
96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6
#
Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143
\202\213\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\153\060\202\003\123\240\003\002\001\002\002\021\000
\202\020\317\260\322\100\343\131\104\143\340\273\143\202\213\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061\051
\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156\145
\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145\141
\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003\125
\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130\061
\060\036\027\015\061\065\060\066\060\064\061\061\060\064\063\070
\132\027\015\063\065\060\066\060\064\061\061\060\064\063\070\132
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\255\350\044\163\364\024\067\363\233\236\053\127\050\034
\207\276\334\267\337\070\220\214\156\074\346\127\240\170\367\165
\302\242\376\365\152\156\366\000\117\050\333\336\150\206\154\104
\223\266\261\143\375\024\022\153\277\037\322\352\061\233\041\176
\321\063\074\272\110\365\335\171\337\263\270\377\022\361\041\232
```

\113\301\212\206\161\151\112\146\146\154\217\176\074\160\277\255
\051\042\006\363\344\300\346\200\256\342\113\217\267\231\176\224
\003\237\323\107\227\174\231\110\043\123\350\070\256\117\012\157
\203\056\321\111\127\214\200\164\266\332\057\320\070\215\173\003
\160\041\033\165\362\060\074\372\217\256\335\332\143\253\353\026
\117\302\216\021\113\176\317\013\350\377\265\167\056\364\262\173
\112\340\114\022\045\014\160\215\003\051\240\341\123\044\354\023
\331\356\031\277\020\263\112\214\077\211\243\141\121\336\254\207
\007\224\364\143\161\354\056\342\157\133\230\201\341\211\134\064
\171\154\166\357\073\220\142\171\346\333\244\232\057\046\305\320
\020\341\016\336\331\020\216\026\373\267\367\250\367\307\345\002
\007\230\217\066\010\225\347\342\067\226\015\066\165\236\373\016
\162\261\035\233\274\003\371\111\005\330\201\335\005\264\052\326
\101\351\254\001\166\225\012\017\330\337\325\275\022\037\065\057
\050\027\154\322\230\301\250\011\144\167\156\107\067\272\316\254
\131\136\150\235\177\162\326\211\305\006\101\051\076\131\076\335
\046\365\044\311\021\247\132\243\114\100\037\106\241\231\265\247
\072\121\156\206\073\236\175\162\247\022\005\170\131\355\076\121
\170\025\013\003\217\215\320\057\005\262\076\173\112\034\113\163
\005\022\374\306\352\340\120\023\174\103\223\164\263\312\164\347
\216\037\001\010\320\060\324\133\161\066\264\007\272\301\060\060
\134\110\267\202\073\230\246\175\140\212\242\243\051\202\314\272
\275\203\004\033\242\203\003\101\241\326\005\361\033\302\266\360
\250\174\206\073\106\250\110\052\210\334\166\232\166\277\037\152
\245\075\031\217\353\070\363\144\336\310\053\015\012\050\377\367
\333\342\025\102\324\042\320\047\135\341\171\376\030\347\160\210
\255\116\346\331\213\072\306\335\047\121\156\377\274\144\365\063
\103\117\002\003\001\000\001\243\102\060\100\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\171\264\131\346\173\266\345\344\001
\163\200\010\210\310\032\130\366\351\233\156\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\125
\037\130\251\274\262\250\120\320\014\261\330\032\151\040\047\051
\010\254\141\165\134\212\156\370\202\345\151\057\325\366\126\113
\271\270\163\020\131\323\041\227\176\347\114\161\373\262\322\140
\255\071\250\013\352\027\041\126\205\361\120\016\131\353\316\340
\131\351\272\311\025\357\206\235\217\204\200\366\344\351\221\220
\334\027\233\142\033\105\360\146\225\322\174\157\302\352\073\357
\037\317\313\326\256\047\361\251\260\310\256\375\175\176\232\372
\042\004\353\377\331\177\352\221\053\042\261\027\016\217\362\212
\064\133\130\330\374\001\311\124\271\270\046\314\212\210\063\211
\114\055\204\074\202\337\356\226\127\005\272\054\273\367\304\267
\307\116\073\202\276\061\310\042\163\163\222\321\302\200\244\071
\071\020\063\043\202\114\074\237\206\262\125\230\035\276\051\206
\214\042\233\236\342\153\073\127\072\202\160\115\334\011\307\211
\313\012\007\115\154\350\135\216\311\357\316\253\307\273\265\053
\116\105\326\112\320\046\314\345\162\312\010\152\245\225\343\025


```
\241\367\244\355\311\054\137\245\373\377\254\050\002\056\276\327
\173\273\343\161\173\220\026\323\007\136\106\123\174\067\007\102
\214\323\304\226\234\325\231\265\052\340\225\032\200\110\256\114
\071\007\316\314\107\244\122\225\053\272\270\373\255\322\063\123
\175\345\035\115\155\325\241\261\307\102\157\346\100\047\065\134
\243\050\267\007\215\347\215\063\220\347\043\237\373\120\234\171
\154\106\325\264\025\263\226\156\176\233\014\226\072\270\122\055
\077\326\133\341\373\010\302\204\376\044\250\243\211\332\254\152
\341\030\052\261\250\103\141\133\323\037\334\073\215\166\362\055
\350\215\165\337\027\063\154\075\123\373\173\313\101\137\377\334
\242\320\141\070\341\226\270\254\135\213\067\327\165\325\063\300
\231\021\256\235\101\301\162\165\204\276\002\101\102\137\147\044
\110\224\321\233\047\276\007\077\271\270\117\201\164\121\341\172
\267\355\235\043\342\276\340\325\050\004\023\074\061\003\236\335
\172\154\217\306\007\030\306\177\336\107\216\077\050\236\004\006
\317\245\124\064\167\275\354\211\233\351\027\103\337\133\333\137
\376\216\036\127\242\315\100\235\176\142\042\332\336\030\047
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Trust for "ISRG Root X1"

Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US

Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00

Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US

Not Valid Before: Thu Jun 04 11:04:38 2015

Not Valid After : Mon Jun 04 11:04:38 2035

Fingerprint (SHA-256):

96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6

Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ISRG Root X1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\312\275\052\171\241\007\152\061\362\035\045\066\065\313\003\235
\103\051\245\350
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\014\322\371\340\332\027\163\351\355\206\115\245\343\160\347\116
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
```

```
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143
\202\213\000
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "AC RAIZ FNMT-RCM"

#

Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07

Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES

Not Valid Before: Wed Oct 29 15:59:56 2008

Not Valid After : Tue Jan 01 00:00:00 2030

Fingerprint (SHA-256):

EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA

#

Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AC RAIZ FNMT-RCM"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151
```

\007

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\005\203\060\202\003\153\240\003\002\001\002\002\017\135
\223\215\060\147\066\310\006\035\032\307\124\204\151\007\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\060\073\061
\013\060\011\006\003\125\004\006\023\002\105\123\061\021\060\017
\006\003\125\004\012\014\010\106\116\115\124\055\122\103\115\061
\031\060\027\006\003\125\004\013\014\020\101\103\040\122\101\111
\132\040\106\116\115\124\055\122\103\115\060\036\027\015\060\070
\061\060\062\071\061\065\065\071\065\066\132\027\015\063\060\060
\061\060\061\060\060\060\060\060\060\132\060\073\061\013\060\011
\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003\125
\004\012\014\010\106\116\115\124\055\122\103\115\061\031\060\027
\006\003\125\004\013\014\020\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\272\161\200\172\114\206\156\177
\310\023\155\300\306\175\034\000\227\217\054\014\043\273\020\232
\100\251\032\267\207\210\370\233\126\152\373\346\173\216\213\222
\216\247\045\135\131\021\333\066\056\267\121\027\037\251\010\037
\004\027\044\130\252\067\112\030\337\345\071\324\127\375\327\301
\054\221\001\221\342\042\324\003\300\130\374\167\107\354\217\076
\164\103\272\254\064\215\115\070\166\147\216\260\310\157\060\063
\130\161\134\264\365\153\156\324\001\120\270\023\176\154\112\243
\111\321\040\031\356\274\300\051\030\145\247\336\376\357\335\012
\220\041\347\032\147\222\102\020\230\137\117\060\274\076\034\105
\264\020\327\150\100\024\300\100\372\347\167\027\172\346\013\217
\145\133\074\331\232\122\333\265\275\236\106\317\075\353\221\005
\002\300\226\262\166\114\115\020\226\073\222\372\234\177\017\231
\337\276\043\065\105\036\002\134\376\265\250\233\231\045\332\136
\363\042\303\071\365\344\052\056\323\306\037\304\154\252\305\034
\152\001\005\112\057\322\305\301\250\064\046\135\146\245\322\002
\041\371\030\267\006\365\116\231\157\250\253\114\121\350\317\120
\030\305\167\310\071\011\054\111\222\062\231\250\273\027\027\171
\260\132\305\346\243\304\131\145\107\065\203\136\251\350\065\013
\231\273\344\315\040\306\233\112\006\071\265\150\374\042\272\356
\125\214\053\116\352\363\261\343\374\266\231\232\325\102\372\161
\115\010\317\207\036\152\161\175\371\323\264\351\245\161\201\173
\302\116\107\226\245\366\166\205\243\050\217\351\200\156\201\123
\245\155\137\270\110\371\302\371\066\246\056\111\377\270\226\302
\214\007\263\233\210\130\374\353\033\034\336\055\160\342\227\222
\060\241\211\343\274\125\250\047\326\113\355\220\255\213\372\143
\045\131\055\250\065\335\312\227\063\274\345\315\307\235\321\354
\357\136\016\112\220\006\046\143\255\271\331\065\055\007\272\166
\145\054\254\127\217\175\364\007\224\327\201\002\226\135\243\007
\111\325\172\320\127\371\033\347\123\106\165\252\260\171\102\313

\150\161\010\351\140\275\071\151\316\364\257\303\126\100\307\255
\122\242\011\344\157\206\107\212\037\353\050\047\135\203\040\257
\004\311\154\126\232\213\106\365\002\003\001\000\001\243\201\203
\060\201\200\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\367
\175\305\375\304\350\232\033\167\144\247\365\035\240\314\277\207
\140\232\155\060\076\006\003\125\035\040\004\067\060\065\060\063
\006\004\125\035\040\000\060\053\060\051\006\010\053\006\001\005
\005\007\002\001\026\035\150\164\164\160\072\057\057\167\167\167
\056\143\145\162\164\056\146\156\155\164\056\145\163\057\144\160
\143\163\057\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\002\001\000\007\220\112\337\363\043\116\360\303
\234\121\145\233\234\042\242\212\014\205\363\163\051\153\115\376
\001\342\251\014\143\001\277\004\147\245\235\230\137\375\001\023
\372\354\232\142\351\206\376\266\142\322\156\114\224\373\300\165
\105\174\145\014\370\262\067\317\254\017\317\215\157\371\031\367
\217\354\036\362\160\236\360\312\270\357\267\377\166\067\166\133
\366\156\210\363\257\142\062\042\223\015\072\152\216\024\146\014
\055\123\164\127\145\036\325\262\335\043\201\073\245\146\043\047
\147\011\217\341\167\252\103\315\145\121\010\355\121\130\376\346
\071\371\313\107\204\244\025\361\166\273\244\356\244\073\304\137
\357\262\063\226\021\030\267\311\145\276\030\341\243\244\334\372
\030\371\323\274\023\233\071\172\064\272\323\101\373\372\062\212
\052\267\053\206\013\151\203\070\276\315\212\056\013\160\255\215
\046\222\356\036\365\001\053\012\331\326\227\233\156\340\250\031
\034\072\041\213\014\036\100\255\003\347\335\146\176\365\271\040
\015\003\350\226\371\202\105\324\071\340\240\000\135\327\230\346
\175\236\147\163\303\232\052\367\253\213\241\072\024\357\064\274
\122\016\211\230\232\004\100\204\035\176\105\151\223\127\316\353
\316\370\120\174\117\034\156\004\103\233\371\326\073\043\030\351
\352\216\321\115\106\215\361\073\344\152\312\272\373\043\267\233
\372\231\001\051\132\130\132\055\343\371\324\155\016\046\255\301
\156\064\274\062\370\014\005\372\145\243\333\073\067\203\042\351
\326\334\162\063\375\135\362\040\275\166\074\043\332\050\367\371
\033\353\131\144\325\334\137\162\176\040\374\315\211\265\220\147
\115\142\172\077\116\255\035\303\071\376\172\364\050\026\337\101
\366\110\200\005\327\017\121\171\254\020\253\324\354\003\146\346
\152\260\272\061\222\102\100\152\276\072\323\162\341\152\067\125
\274\254\035\225\267\151\141\362\103\221\164\346\240\323\012\044
\106\241\010\257\326\332\105\031\226\324\123\035\133\204\171\360
\300\367\107\357\213\217\305\006\256\235\114\142\235\377\106\004
\370\323\311\266\020\045\100\165\376\026\252\311\112\140\206\057
\272\357\060\167\344\124\342\270\204\231\130\200\252\023\213\121
\072\117\110\366\213\266\263

END

CKA_NSS_MOZILLA_CA_POLICY

```
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "AC RAIZ FNMT-RCM"
# Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
#
# Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07
# Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
# Not Valid Before: Wed Oct 29 15:59:56 2008
# Not Valid After : Tue Jan 01 00:00:00 2030
# Fingerprint (SHA-256):
EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA
# Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ FNMT-RCM"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\354\120\065\007\262\025\304\225\142\031\342\250\232\133\102\231
\054\114\054\040
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\342\011\004\264\323\275\321\240\024\375\032\322\107\304\127\035
END
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151
\007
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Amazon Root CA 1"
#
# Issuer: CN=Amazon Root CA 1,O=Amazon,C=US
# Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca
# Subject: CN=Amazon Root CA 1,O=Amazon,C=US
```

```
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After : Sun Jan 17 00:00:00 2038
# Fingerprint (SHA-256):
8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E
# Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103
\346\226\066\133\312
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\101\060\202\002\051\240\003\002\001\002\002\023\006
\154\237\317\231\277\214\012\071\342\360\170\212\103\346\226\066
\133\312\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157
\156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172
\157\156\040\122\157\157\164\040\103\101\040\061\060\036\027\015
\061\065\060\065\062\066\060\060\060\060\060\060\132\027\015\063
\070\060\061\061\067\060\060\060\060\060\060\132\060\071\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006
\003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027
\006\003\125\004\003\023\020\101\155\141\172\157\156\040\122\157
\157\164\040\103\101\040\061\060\202\001\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060
\202\001\012\002\202\001\001\000\262\170\200\161\312\170\325\343
\161\257\107\200\120\164\175\156\330\327\210\166\364\231\150\367
\130\041\140\371\164\204\001\057\254\002\055\206\323\240\103\172
\116\262\244\320\066\272\001\276\215\333\110\310\007\027\066\114
```

\364\356\210\043\307\076\353\067\365\265\031\370\111\150\260\336
\327\271\166\070\035\141\236\244\376\202\066\245\345\112\126\344
\105\341\371\375\264\026\372\164\332\234\233\065\071\057\372\260
\040\120\006\154\172\320\200\262\246\371\257\354\107\031\217\120
\070\007\334\242\207\071\130\370\272\325\251\371\110\147\060\226
\356\224\170\136\157\211\243\121\300\060\206\146\241\105\146\272
\124\353\243\303\221\371\110\334\377\321\350\060\055\175\055\164
\160\065\327\210\044\367\236\304\131\156\273\163\207\027\362\062
\106\050\270\103\372\267\035\252\312\264\362\237\044\016\055\113
\367\161\134\136\151\377\352\225\002\313\070\212\256\120\070\157
\333\373\055\142\033\305\307\036\124\341\167\340\147\310\017\234
\207\043\326\077\100\040\177\040\200\304\200\114\076\073\044\046
\216\004\256\154\232\310\252\015\002\003\001\000\001\243\102\060
\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\206\060\035\006\003\125\035\016\004\026\004\024\204\030\314
\205\064\354\274\014\224\224\056\010\131\234\307\262\020\116\012
\010\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\003\202\001\001\000\230\362\067\132\101\220\241\032\305\166\121
\050\040\066\043\016\256\346\050\273\252\370\224\256\110\244\060
\177\033\374\044\215\113\264\310\241\227\366\266\361\172\160\310
\123\223\314\010\050\343\230\045\317\043\244\371\336\041\323\174
\205\011\255\116\232\165\072\302\013\152\211\170\166\104\107\030
\145\154\215\101\216\073\177\232\313\364\265\247\120\327\005\054
\067\350\003\113\255\351\141\240\002\156\365\362\360\305\262\355
\133\267\334\372\224\134\167\236\023\245\177\122\255\225\362\370
\223\073\336\213\134\133\312\132\122\133\140\257\024\367\113\357
\243\373\237\100\225\155\061\124\374\102\323\307\106\037\043\255
\331\017\110\160\232\331\165\170\161\321\162\103\064\165\156\127
\131\302\002\134\046\140\051\317\043\031\026\216\210\103\245\324
\344\313\010\373\043\021\103\350\103\051\162\142\241\251\135\136
\010\324\220\256\270\330\316\024\302\320\125\362\206\366\304\223
\103\167\146\141\300\271\350\101\327\227\170\140\003\156\112\162
\256\245\321\175\272\020\236\206\154\033\212\271\131\063\370\353
\304\220\276\361\271

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Amazon Root CA 1"

Issuer: CN=Amazon Root CA 1,O=Amazon,C=US

Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca

Subject: CN=Amazon Root CA 1,O=Amazon,C=US

Not Valid Before: Tue May 26 00:00:00 2015

Not Valid After : Sun Jan 17 00:00:00 2038

Fingerprint (SHA-256):

```

8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E
# Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon
Root CA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\215\247\371\145\354\136\374\067\221\017\034\156\131\375\301\314
\152\156\336\026
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\103\306\277\256\354\376\255\057\030\306\210\150\060\374\310\346
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103
\346\226\066\133\312
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Amazon Root CA 2"
#
# Issuer: CN=Amazon Root CA 2,O=Amazon,C=US
# Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37
#
Subject: CN=Amazon Root CA 2,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After : Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4
# Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```


CKA_SUBJECT MULTILINE_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370
\133\046\273\212\067

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\101\060\202\003\051\240\003\002\001\002\002\023\006
\154\237\322\226\065\206\237\012\017\345\206\170\370\133\046\273
\212\067\060\015\006\011\052\206\110\206\367\015\001\001\014\005
\000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157
\156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172
\157\156\040\122\157\157\164\040\103\101\040\062\060\036\027\015
\061\065\060\065\062\066\060\060\060\060\060\060\132\027\015\064
\060\060\065\062\066\060\060\060\060\060\060\132\060\071\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006
\003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027
\006\003\125\004\003\023\020\101\155\141\172\157\156\040\122\157
\157\164\040\103\101\040\062\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\255\226\237\055\234\112\114\112
\201\171\121\231\354\212\313\153\140\121\023\274\115\155\006\374
\260\010\215\335\031\020\152\307\046\014\065\330\300\157\040\204
\351\224\261\233\205\003\303\133\333\112\350\310\370\220\166\331
\133\117\343\114\350\006\066\115\314\232\254\075\014\220\053\222
\324\006\031\140\254\067\104\171\205\201\202\255\132\067\340\015
\314\235\246\114\122\166\352\103\235\267\004\321\120\366\125\340
\325\322\246\111\205\351\067\351\312\176\256\134\225\115\110\232
\077\256\040\132\155\210\225\331\064\270\122\032\103\220\260\277
\154\005\271\266\170\267\352\320\344\072\074\022\123\142\377\112
\362\173\276\065\005\251\022\064\343\363\144\164\142\054\075\000
\111\132\050\376\062\104\273\207\335\145\047\002\161\073\332\112
\367\037\332\315\367\041\125\220\117\017\354\256\202\341\237\153
\331\105\323\273\360\137\207\355\074\054\071\206\332\077\336\354
\162\125\353\171\243\255\333\335\174\260\272\034\316\374\336\117

\065\166\317\017\370\170\037\152\066\121\106\047\141\133\351\236
\317\360\242\125\175\174\045\212\157\057\264\305\317\204\056\053
\375\015\121\020\154\373\137\033\274\033\176\305\256\073\230\001
\061\222\377\013\127\364\232\262\271\127\351\253\357\015\166\321
\360\356\364\316\206\247\340\156\351\264\151\241\337\151\366\063
\306\151\056\227\023\236\245\207\260\127\020\201\067\311\123\263
\273\177\366\222\321\234\320\030\364\222\156\332\203\117\246\143
\231\114\245\373\136\357\041\144\172\040\137\154\144\205\025\313
\067\351\142\014\013\052\026\334\001\056\062\332\076\113\365\236
\072\366\027\100\224\357\236\221\010\206\372\276\143\250\132\063
\354\313\164\103\225\371\154\151\122\066\307\051\157\374\125\003
\134\037\373\237\275\107\353\347\111\107\225\013\116\211\042\011
\111\340\365\141\036\361\277\056\212\162\156\200\131\377\127\072
\371\165\062\243\116\137\354\355\050\142\331\115\163\362\314\201
\027\140\355\315\353\334\333\247\312\305\176\002\275\362\124\010
\124\375\264\055\011\054\027\124\112\230\321\124\341\121\147\010
\322\355\156\176\157\077\322\055\201\131\051\146\313\220\071\225
\021\036\164\047\376\335\353\257\002\003\001\000\001\243\102\060
\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\206\060\035\006\003\125\035\016\004\026\004\024\260\014\360
\114\060\364\005\130\002\110\375\063\345\122\257\113\204\343\146
\122\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000
\003\202\002\001\000\252\250\200\217\016\170\243\340\242\324\315
\346\365\230\172\073\352\000\003\260\227\016\223\274\132\250\366
\054\214\162\207\251\261\374\177\163\375\143\161\170\245\207\131
\317\060\341\015\020\262\023\132\155\202\365\152\346\200\237\240
\005\013\150\344\107\153\307\152\337\266\375\167\062\162\345\030
\372\011\364\240\223\054\135\322\214\165\205\166\145\220\014\003
\171\267\061\043\143\255\170\203\011\206\150\204\312\377\371\317
\046\232\222\171\347\315\113\305\347\141\247\027\313\363\251\022
\223\223\153\247\350\057\123\222\304\140\130\260\314\002\121\030
\133\205\215\142\131\143\266\255\264\336\232\373\046\367\000\047
\300\135\125\067\164\231\311\120\177\343\131\056\104\343\054\045
\356\354\114\062\167\264\237\032\351\113\135\040\305\332\375\034
\207\026\306\103\350\324\273\046\232\105\160\136\251\013\067\123
\342\106\173\047\375\340\106\362\211\267\314\102\266\313\050\046
\156\331\245\311\072\310\101\023\140\367\120\214\025\256\262\155
\032\025\032\127\170\346\222\052\331\145\220\202\077\154\002\257
\256\022\072\047\226\066\004\327\035\242\200\143\251\233\361\345
\272\264\174\024\260\116\311\261\037\164\137\070\366\121\352\233
\372\054\242\021\324\251\055\047\032\105\261\257\262\116\161\015
\300\130\106\326\151\006\313\123\313\263\376\153\101\315\101\176
\175\114\017\174\162\171\172\131\315\136\112\016\254\233\251\230
\163\171\174\264\364\314\271\270\007\014\262\164\134\270\307\157
\210\241\220\247\364\252\371\277\147\072\364\032\025\142\036\267
\237\276\075\261\051\257\147\241\022\362\130\020\031\123\003\060
\033\270\032\211\366\234\275\227\003\216\243\011\363\035\213\041

```
\361\264\337\344\034\321\237\145\002\006\352\134\326\023\263\204
\357\242\245\134\214\167\051\247\150\300\153\256\100\322\250\264
\352\315\360\215\113\070\234\031\232\033\050\124\270\211\220\357
\312\165\201\076\036\362\144\044\307\030\257\116\377\107\236\007
\366\065\145\244\323\012\126\377\365\027\144\154\357\250\042\045
\111\223\266\337\000\027\332\130\176\135\356\305\033\260\321\321
\137\041\020\307\371\363\272\002\012\047\007\305\361\326\307\323
\340\373\011\140\154
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Amazon Root CA 2"

Issuer: CN=Amazon Root CA 2,O=Amazon,C=US

Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37

#

Subject: CN=Amazon Root CA 2,O=Amazon,C=US

Not Valid Before: Tue May 26 00:00:00 2015

Not Valid After : Sat May 26 00:00:00 2040

Fingerprint (SHA-256):

1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4

Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Amazon Root CA 2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\132\214\357\105\327\246\230\131\166\172\214\213\104\226\265\170
\317\107\113\032
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\310\345\215\316\250\102\342\172\300\052\134\174\236\046\277\146
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370
\133\046\273\212\067
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Amazon Root CA 3"

#

Issuer: CN=Amazon Root CA 3,O=Amazon,C=US

Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a

Subject: CN=Amazon Root CA 3,O=Amazon,C=US

Not Valid Before: Tue May 26 00:00:00 2015

Not Valid After : Sat May 26 00:00:00 2040

Fingerprint (SHA-256):

18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4

Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL

CK_FALSE

CKA_LABEL UTF8 "Amazon Root CA 3"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156

\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157

\156\040\122\157\157\164\040\103\101\040\063

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156

\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157

\156\040\122\157\157\164\040\103\101\040\063

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350

\236\166\003\362\112

END

CKA_VALUE MULTILINE_OCTAL

\060\202\001\266\060\202\001\133\240\003\002\001\002\002\023\006

\154\237\325\164\227\066\146\077\073\013\232\331\350\236\166\003

\362\112\060\012\006\010\052\206\110\316\075\004\003\002\060\071

\061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060

\015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031

\060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040

\122\157\157\164\040\103\101\040\063\060\036\027\015\061\065\060

\065\062\066\060\060\060\060\060\060\060\132\027\015\064\060\060\065

```
\062\066\060\060\060\060\060\060\060\132\060\071\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\017\060\015\006\003\125\004
\012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125
\004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040
\103\101\040\063\060\131\060\023\006\007\052\206\110\316\075\002
\001\006\010\052\206\110\316\075\003\001\007\003\102\000\004\051
\227\247\306\101\177\300\015\233\350\001\033\126\306\362\122\245
\272\055\262\022\350\322\056\327\372\311\305\330\252\155\037\163
\201\073\073\230\153\071\174\063\245\305\116\206\216\200\027\150
\142\105\127\175\104\130\035\263\067\345\147\010\353\146\336\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\206\060\035\006\003\125\035\016\004\026\004\024\253
\266\333\327\006\236\067\254\060\206\007\221\160\307\234\304\031
\261\170\300\060\012\006\010\052\206\110\316\075\004\003\002\003
\111\000\060\106\002\041\000\340\205\222\243\027\267\215\371\053
\006\245\223\254\032\230\150\141\162\372\341\241\320\373\034\170
\140\246\103\231\305\270\304\002\041\000\234\002\357\361\224\234
\263\226\371\353\306\052\370\266\054\376\072\220\024\026\327\214
\143\044\110\034\337\060\175\325\150\073
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Amazon Root CA 3"

Issuer: CN=Amazon Root CA 3,O=Amazon,C=US

Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a

Subject: CN=Amazon Root CA 3,O=Amazon,C=US

Not Valid Before: Tue May 26 00:00:00 2015

Not Valid After

: Sat May 26 00:00:00 2040

Fingerprint (SHA-256):

18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4

Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Amazon Root CA 3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\015\104\335\214\074\214\032\032\130\165\144\201\351\017\056\052
\377\263\322\156
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\240\324\357\013\367\265\330\111\225\052\354\365\304\374\201\207
```

END

```

CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350
\236\166\003\362\112
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Amazon Root CA 4"
#
# Issuer: CN=Amazon Root CA 4,O=Amazon,C=US
# Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e
# Subject: CN=Amazon Root CA 4,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After : Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92
# Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016

END

CKA_VALUE MULTILINE_OCTAL

\060\202\001\362\060\202\001\170\240\003\002\001\002\002\023\006
\154\237\327\301\273\020\114\051\103\345\161\173\173\054\310\032
\301\016\060\012\006\010\052\206\110\316\075\004\003\003\060\071
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060
\015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031
\060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040
\122\157\157\164\040\103\101\040\064\060\036\027\015\061\065\060
\065\062\066\060\060\060\060\060\132\027\015\064\060\060\065
\062\066\060\060\060\060\060\132\060\071\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\017\060\015\006\003\125\004
\012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125
\004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040
\103\101\040\064\060\166\060\020\006\007\052\206\110\316\075\002
\001\006\005\053\201\004\000\042\003\142\000\004\322\253\212\067
\117\243\123\015\376\301\212\173\113\250\173\106\113\143\260\142
\366\055\033\333\010\161\041\322\000\350\143\275\232\047\373\360
\071\156\135\352\075\245\311\201\252\243\133\040\230\105\135\026
\333\375\350\020\155\343\234\340\343\275\137\204\142\363\160\144
\063\240\313\044\057\160\272\210\241\052\240\165\370\201\256\142
\006\304\201\333\071\156\051\260\036\372\056\134\243\102\060\100
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\206\060\035\006\003\125\035\016\004\026\004\024\323\354\307\072
\145\156\314\341\332\166\232\126\373\234\363\206\155\127\345\201
\060\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060
\145\002\060\072\213\041\361\275\176\021\255\320\357\130\226\057
\326\353\235\176\220\215\053\317\146\125\303\054\343\050\251\160
\012\107\016\360\067\131\022\377\055\231\224\050\116\052\117\065
\115\063\132\002\061\000\352\165\000\116\073\304\072\224\022\221
\311\130\106\235\041\023\162\247\210\234\212\344\114\112\333\226
\324\254\213\153\153\111\022\123\063\255\327\344\276\044\374\265
\012\166\324\245\274\020

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Amazon Root CA 4"

Issuer: CN=Amazon Root CA 4,O=Amazon,C=US

Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e

Subject:

CN=Amazon Root CA 4,O=Amazon,C=US

Not Valid Before: Tue May 26 00:00:00 2015

```
# Not Valid After : Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92
# Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\366\020\204\007\326\370\273\147\230\014\302\342\104\302\353\256
\034\357\143\276
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\211\274\047\325\353\027\215\006\152\151\325\375\211\107\264\315
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Symantec Class 1 Public Primary Certification Authority - G6"
#
# Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98
# Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Tue Oct 18 00:00:00 2011
# Not Valid After : Tue Dec 01 23:59:59 2037
# Fingerprint (SHA-256):
9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9
# Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64
#
For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```



```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 1 Public Primary Certification Authority - G6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8
"0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320
\363\230
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\044
\062\165\362\035\057\322\011\063\367\264\152\312\320\363\230\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145
\143\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
```

\040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060
\060\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\061
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\307\071\327
\111\144\251\231\202\042\114\352\105\331\007\026\343\173\364\203
\350\231\163\372\153\261\066\340\232\167\240\100\302\201\215\001
\307\314\214\275\217\175\367\171\343\172\114\003\115\331\373\375
\207\070\050\054\335\232\213\124\010\333\147\373\033\214\376\050
\222\057\276\267\262\110\247\201\241\330\136\210\303\314\071\100
\101\132\321\334\345\332\020\237\057\332\001\115\375\056\106\174
\371\056\047\012\151\067\356\221\243\033\152\314\104\277\033\307
\303\324\021\262\120\140\227\011\275\056\042\365\101\204\146\237
\315\100\246\251\000\200\301\037\225\222\237\336\363\110\357\333
\035\167\141\374\177\337\356\226\244\162\320\266\076\377\170\047
\257\313\222\025\151\010\333\143\020\342\346\227\254\156\334\254
\366\242\316\036\107\231\271\211\267\022\346\241\324\315\131\021
\147\303\157\205\330\102\116\050\276\131\125\131\004\225\253\217
\067\200\277\015\360\374\037\072\144\061\130\201\170\327\342\065
\366\040\077\051\270\217\026\156\076\110\334\265\114\007\341\362
\032\352\176\012\171\326\250\275\353\135\206\053\115\002\003\001
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\063\101\350\310\071\022\025\223\110\362\226\062\056\132
\365\332\224\137\123\140\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\001\001\000\025\343\163\127\261\027
\266\137\111\151\104\246\366\136\172\147\254\322\336\165\111\253
\376\045\125\307\072\311\104\025\020\156\277\061\153\313\331\007
\223\177\034\205\143\000\343\062\022\340\314\313\373\071\154\217
\342\123\342\074\100\063\331\244\214\107\346\255\130\373\211\257
\343\336\206\051\126\064\054\105\270\022\372\104\211\156\055\024
\045\050\044\001\145\326\352\122\254\005\156\126\022\011\075\320
\164\364\327\275\006\312\250\072\215\126\102\372\215\162\076\164
\361\003\162\337\207\033\136\016\172\125\226\054\070\267\230\205
\315\115\063\104\311\224\217\132\061\060\067\113\243\072\022\263
\347\066\321\041\150\113\055\070\346\123\256\034\045\126\010\126
\003\147\204\235\306\303\316\044\142\307\114\066\317\260\006\104
\267\365\137\002\335\331\124\351\057\220\116\172\310\116\203\100

```
\014\232\227\074\067\277\277\354\366\360\264\205\167\050\301\013
\310\147\202\020\027\070\242\267\006\352\233\277\072\370\351\043
\007\277\164\340\230\070\025\125\170\356\162\000\134\031\243\364
\322\063\340\377\275\321\124\071\051\017
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER MULTILINE_OCTAL

```
\062\062\060\070\063\061\060\060\060\060\060\060\132
```

END

Trust for "Symantec Class 1 Public Primary Certification Authority - G6"

Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust

Network,O=Symantec Corporation,C=US

Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98

Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust

Network,O=Symantec Corporation,C=US

Not Valid Before: Tue Oct 18 00:00:00 2011

Not Valid After : Tue Dec 01 23:59:59 2037

Fingerprint (SHA-256):

```
9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9
```

Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Symantec Class 1 Public Primary Certification
Authority - G6"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\121\177\141\036\051\221\153\123\202\373\162\347\104\331\215\303
\314\123\155\144
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\057\250\264\332\366\144\113\036\202\371\106\075\124\032\174\260
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
```

```

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320
\363\230
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Symantec Class 2 Public Primary Certification Authority - G6"
#
# Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41
# Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Tue Oct 18 00:00:00 2011
# Not Valid After : Tue Dec 01 23:59:59 2037
# Fingerprint (SHA-256):
CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0
# Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F
# For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156

```

\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261
\377\101

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\144
\202\236\374\067\036\164\135\374\227\377\227\310\261\377\101\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105
\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145
\143\040\103\154\141\163\163\040\062\040\120\165\142\154\151\143
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\062
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\315\314\351
\005\310\143\205\313\077\100\143\027\275\030\372\065\346\004\147
\127\145\230\051\244\117\311\134\217\017\064\322\370\332\250\023
\142\252\270\036\120\147\170\260\026\114\240\071\251\025\172\256
\355\322\242\300\360\220\067\051\030\046\134\350\015\074\266\154
\111\077\301\340\334\331\113\266\024\031\013\246\323\226\341\326
\011\343\031\046\034\371\037\145\113\371\032\103\034\000\203\326
\320\252\111\242\324\333\346\142\070\272\120\024\103\155\371\061

\370\126\026\331\070\002\221\317\353\154\335\273\071\116\231\341
\060\147\105\361\324\360\215\303\337\376\362\070\007\041\175\000
\136\126\104\263\344\140\275\221\053\234\253\133\004\162\017\262
\050\331\162\253\005\040\102\045\251\133\003\152\040\020\314\061
\360\053\332\065\054\320\373\232\227\116\360\202\113\053\330\137
\066\243\013\055\257\143\015\035\045\177\241\156\134\142\241\215
\050\076\241\374\034\040\370\001\057\272\125\232\021\260\031\322
\310\120\171\153\016\152\005\327\252\004\066\262\243\362\341\137
\167\247\167\234\345\036\334\351\337\152\301\145\135\002\003\001
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\207\214\040\225\310\230\112\321\326\200\006\112\220\064
\104\337\034\115\277\260\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\001\001\000\201\216\262\245\146\226
\267\041\245\266\357\157\043\132\137\333\201\305\102\245\170\301
\151\375\364\074\327\371\134\153\160\162\032\374\132\227\115\000
\200\210\210\202\212\303\161\015\216\305\211\233\054\355\215\013
\322\162\124\365\175\324\134\103\127\351\363\256\245\002\021\366
\166\053\201\127\335\175\332\164\060\375\124\107\366\340\026\156
\246\264\012\110\346\347\165\007\017\051\031\071\316\171\364\266
\154\305\137\231\325\037\113\372\337\155\054\074\015\124\200\160
\360\210\013\200\317\306\150\242\270\035\160\331\166\214\374\356
\245\311\317\255\035\317\231\045\127\132\142\105\313\026\153\275
\111\315\245\243\214\151\171\045\256\270\114\154\213\100\146\113
\026\077\317\002\032\335\341\154\153\007\141\152\166\025\051\231
\177\033\335\210\200\301\277\265\217\163\305\246\226\043\204\246
\050\206\044\063\152\001\056\127\163\045\266\136\277\217\346\035
\141\250\100\051\147\035\207\233\035\177\233\237\231\315\061\326
\124\276\142\273\071\254\150\022\110\221\040\245\313\261\335\376
\157\374\132\344\202\125\131\257\061\251

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER MULTILINE_OCTAL

\062\062\060\070\063\061\060\060\060\060\060\060\132

END

#

Trust for "Symantec Class 2 Public Primary Certification Authority - G6"

Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US

Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41

Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US

Not Valid Before: Tue Oct 18 00:00:00 2011

Not Valid After : Tue Dec 01 23:59:59 2037

```

# Fingerprint (SHA-256):
CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0
# Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\100\263\061\240\351\277\350\125\274\071\223\312\160\117\116\302
\121\324\035\217
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\175\013\203\345\373\174\255\007\117\040\251\265\337\143\355\171
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261
\377\101
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "D-TRUST Root CA 3 2013"
#
# Issuer: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
# Serial Number: 1039788 (0xfddac)
# Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
# Not Valid Before: Fri Sep 20 08:25:51 2013
# Not Valid After : Wed Sep 20 08:25:51 2028
# Fingerprint (SHA-256):
A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57

```

Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root CA 3 2013"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101
\040\063\040\062\060\061\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101
\040\063\040\062\060\061\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\017\335\254
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\016\060\202\002\366\240\003\002\001\002\002\003\017
\335\254\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003
\014\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\101\040\063\040\062\060\061\063\060\036\027\015\061\063\060\071
\062\060\060\070\062\065\065\061\132\027\015\062\070\060\071\062
\060\060\070\062\065\065\061\132\060\105\061\013\060\011\006\003
\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012
\014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\037
\060\035\006\003\125\004\003\014\026\104\055\124\122\125\123\124
\040\122\157\157\164\040\103\101\040\063\040\062\060\061\063\060
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000
\304\173\102\222\202\037\354\355\124\230\216\022\300\312\011\337
\223\156\072\223\134\033\344\020\167\236\116\151\210\154\366\341
\151\362\366\233\242\141\261\275\007\040\164\230\145\361\214\046
\010\315\250\065\312\200\066\321\143\155\350\104\172\202\303\154
\136\336\273\350\066\322\304\150\066\214\237\062\275\204\042\340
\334\302\356\020\106\071\155\257\223\071\256\207\346\303\274\011
```


\311\054\153\147\133\331\233\166\165\114\013\340\273\305\327\274
\076\171\362\137\276\321\220\127\371\256\366\146\137\061\277\323
\155\217\247\272\112\363\043\145\273\267\357\243\045\327\012\352
\130\266\357\210\372\372\171\262\122\130\325\360\254\214\241\121
\164\051\225\252\121\073\220\062\003\237\034\162\164\220\336\075
\355\141\322\345\343\375\144\107\345\271\267\112\251\367\037\256
\226\206\004\254\057\343\244\201\167\267\132\026\377\330\017\077
\366\267\170\314\244\257\372\133\074\022\133\250\122\211\162\357
\210\363\325\104\201\206\225\043\237\173\335\274\331\064\357\174
\224\074\252\300\101\302\343\235\120\032\300\344\031\042\374\263
\002\003\001\000\001\243\202\001\005\060\202\001\001\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035
\006\003\125\035\016\004\026\004\024\077\220\310\175\307\025\157
\363\044\217\251\303\057\113\242\017\041\262\057\347\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\276
\006\003\125\035\037\004\201\266\060\201\263\060\164\240\162\240
\160\206\156\154\144\141\160\072\057\057\144\151\162\145\143\164
\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057
\103\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157
\164\045\062\060\103\101\045\062\060\063\045\062\060\062\060\061
\063\054\117\075\104\055\124\162\165\163\164\045\062\060\107\155
\142\110\054\103\075\104\105\077\143\145\162\164\151\146\151\143
\141\164\145\162\145\166\157\143\141\164\151\157\156\154\151\163
\164\060\073\240\071\240\067\206\065\150\164\164\160\072\057\057
\143\162\154\056\144\055\164\162\165\163\164\056\156\145\164\057
\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157\164
\137\143\141\137\063\137\062\060\061\063\056\143\162\154\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001
\001\000\016\131\016\130\344\164\110\043\104\317\064\041\265\234
\024\032\255\232\113\267\263\210\155\134\251\027\160\360\052\237
\215\173\371\173\205\372\307\071\350\020\010\260\065\053\137\317
\002\322\323\234\310\013\036\356\005\124\256\067\223\004\011\175
\154\217\302\164\274\370\034\224\276\061\001\100\055\363\044\040
\267\204\125\054\134\310\365\164\112\020\031\213\243\307\355\065
\326\011\110\323\016\300\272\071\250\260\106\002\260\333\306\210
\131\302\276\374\173\261\053\317\176\142\207\125\226\314\001\157
\233\147\041\225\065\213\370\020\374\161\033\267\113\067\151\246
\073\326\354\213\356\301\260\363\045\311\217\222\175\241\352\303
\312\104\277\046\245\164\222\234\343\164\353\235\164\331\313\115
\207\330\374\264\151\154\213\240\103\007\140\170\227\351\331\223
\174\302\106\274\233\067\122\243\355\212\074\023\251\173\123\113
\111\232\021\005\054\013\156\126\254\037\056\202\154\340\151\147
\265\016\155\055\331\344\300\025\361\077\372\030\162\341\025\155
\047\133\055\060\050\053\237\110\232\144\053\231\357\362\165\111
\137\134

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "D-TRUST Root CA 3 2013"
# Issuer: CN=D-TRUST Root
  CA 3 2013,O=D-Trust GmbH,C=DE
# Serial Number: 1039788 (0xfddac)
# Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
# Not Valid Before: Fri Sep 20 08:25:51 2013
# Not Valid After : Wed Sep 20 08:25:51 2028
# Fingerprint (SHA-256):
A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57
# Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root CA 3 2013"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\154\174\314\347\324\256\121\137\231\010\315\077\366\350\303\170
\337\157\357\227
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\267\042\146\230\176\326\003\340\301\161\346\165\315\126\105\277
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101
\040\063\040\062\060\061\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\017\335\254
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
#
# Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
SM,O=Türkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
# Serial Number: 1 (0x1)

```

Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR

Not Valid Before: Mon Nov 25 08:25:55 2013

Not Valid After : Sun Oct 25 08:25:55 2013

Fingerprint (SHA-256):

46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16

#

Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165
\162\165\155\040\061

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165
\162\165\155\040\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\143\060\202\003\113\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145\040
\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003\125
\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154\151
\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157\152
\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165\162
\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055\060
\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145\162
\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145
\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060\064
\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040\113
\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040\123
\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165\162
\165\155\040\061\060\036\027\015\061\063\061\061\062\065\060\070
\062\065\065\065\132\027\015\064\063\061\060\062\065\060\070\062
\065\065\065\132\060\201\322\061\013\060\011\006\003\125\004\006
\023\002\124\122\061\030\060\026\006\003\125\004\007\023\017\107
\145\142\172\145\040\055\040\113\157\143\141\145\154\151\061\102
\060\100\006\003\125\004\012\023\071\124\165\162\153\151\171\145
\040\102\151\154\151\155\163\145\154\040\166\145\040\124\145\153
\156\157\154\157\152\151\153\040\101\162\141\163\164\151\162\155
\141\040\113\165\162\165\155\165\040\055\040\124\125\102\111\124
\101\113\061\055\060\053\006\003\125\004\013\023\044\113\141\155
\165\040\123\145\162\164\151\146\151\153\141\163\171\157\156\040
\115\145\162\153\145\172\151\040\055\040\113\141\155\165\040\123
\115\061\066\060\064\006\003\125\004\003\023\055\124\125\102\111
\124\101\113\040\113\141\155\165\040\123\115\040\123\123\114\040
\113\157\153\040\123\145\162\164\151\146\151\153\141\163\151\040
\055\040\123\165\162\165\155\040\061\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\257\165\060\063\252\273
\153\323\231\054\022\067\204\331\215\173\227\200\323\156\347\377
\233\120\225\076\220\225\126\102\327\031\174\046\204\215\222\372
\001\035\072\017\342\144\070\267\214\274\350\210\371\213\044\253
\056\243\365\067\344\100\216\030\045\171\203\165\037\073\377\154
\250\305\306\126\370\264\355\212\104\243\253\154\114\374\035\320
\334\357\150\275\317\344\252\316\360\125\367\242\064\324\203\153
\067\174\034\302\376\265\003\354\127\316\274\264\265\305\355\000
\017\123\067\052\115\364\117\014\203\373\206\317\313\376\214\116
\275\207\371\247\213\041\127\234\172\337\003\147\211\054\235\227
\141\247\020\270\125\220\177\016\055\047\070\164\337\347\375\332

\116\022\343\115\025\042\002\310\340\340\374\017\255\212\327\311
\124\120\314\073\017\312\026\200\204\320\121\126\303\216\126\177
\211\042\063\057\346\205\012\275\245\250\033\066\336\323\334\054
\155\073\307\023\275\131\043\054\346\345\244\367\330\013\355\352
\220\100\104\250\225\273\223\325\320\200\064\266\106\170\016\037
\000\223\106\341\356\351\371\354\117\027\002\003\001\000\001\243
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\145\077
\307\212\206\306\074\335\074\124\134\065\370\072\355\122\014\107
\127\310\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\052\077\341\361\062\216\256\341\230
\134\113\136\317\153\036\152\011\322\042\251\022\307\136\127\175
\163\126\144\200\204\172\223\344\011\271\020\315\237\052\047\341
\000\167\276\110\310\065\250\201\237\344\270\054\311\177\016\260
\322\113\067\135\352\271\325\013\136\064\275\364\163\051\303\355
\046\025\234\176\010\123\212\130\215\320\113\050\337\301\263\337
\040\363\371\343\343\072\337\314\234\224\330\116\117\303\153\027
\267\367\162\350\255\146\063\265\045\123\253\340\370\114\251\235
\375\362\015\272\256\271\331\252\306\153\371\223\273\256\253\270
\227\074\003\032\272\103\306\226\271\105\162\070\263\247\241\226
\075\221\173\176\300\041\123\114\207\355\362\013\124\225\121\223
\325\042\245\015\212\361\223\016\076\124\016\260\330\311\116\334
\362\061\062\126\352\144\371\352\265\235\026\146\102\162\363\177
\323\261\061\103\374\244\216\027\361\155\043\253\224\146\370\255
\373\017\010\156\046\055\177\027\007\011\262\214\373\120\300\237
\226\215\317\266\375\000\235\132\024\232\277\002\104\365\301\302
\237\042\136\242\017\241\343

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL

CK_FALSE

Trust for "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"

Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR

Serial Number: 1 (0x1)

Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR

Not Valid Before: Mon Nov 25 08:25:55 2013

Not Valid After : Sun Oct 25 08:25:55 2043

Fingerprint (SHA-256):

46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16

Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\061\103\144\233\354\316\047\354\355\072\077\013\217\015\344\350
\221\335\356\312
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\334\000\201\334\151\057\076\057\260\073\366\075\132\221\216\111
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003
\125\004\012\023\071\124\165\162\153\151\171\145\040\102\151\154
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040
\113\141\155\165\040\123\115\040\123\123\114\040\113\157\153\040
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165
\162\165\155\040\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GDCA TrustAUTH R5 ROOT"
#
# Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY
CO.,LTD.",C=CN
# Serial Number:7d:09:97:fe:f0:47:ea:7a
# Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY
CO.,LTD.",C=CN
# Not Valid Before: Wed Nov 26 05:13:15 2014
# Not Valid After : Mon Dec 31 15:59:59 2040
# Fingerprint (SHA-256):
BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93

```

Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GDCA TrustAUTH R5 ROOT"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
\122\117\117\124
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
\122\117\117\124
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\175\011\227\376\360\107\352\172
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\210\060\202\003\160\240\003\002\001\002\002\010\175
\011\227\376\360\107\352\172\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\142\061\013\060\011\006\003\125\004
\006\023\002\103\116\061\062\060\060\006\003\125\004\012\014\051
\107\125\101\116\107\040\104\117\116\107\040\103\105\122\124\111
\106\111\103\101\124\105\040\101\125\124\110\117\122\111\124\131
\040\103\117\056\054\114\124\104\056\061\037\060\035\006\003\125
\004\003\014\026\107\104\103\101\040\124\162\165\163\164\101\125
\124\110\040\122\065\040\122\117\117\124\060\036\027\015\061\064
\061\061\062\066\060\065\061\063\061\065\132\027\015\064\060\061
\062\063\061\061\065\065\071\065\071\132\060\142\061\013\060\011
\006\003\125\004\006\023\002\103\116\061\062\060\060\006\003\125
\004\012\014\051\107\125\101\116\107\040\104\117\116\107\040\103
\105\122\124\111\106\111\103\101\124\105\040\101\125\124\110\117
\122\111\124\131\040\103\117\056\054\114\124\104\056\061\037\060
\035\006\003\125\004\003\014\026\107\104\103\101\040\124\162\165
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\163\164\101\125\124\110\040\122\065\040\122\117\117\124\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\331
\243\026\360\310\164\164\167\233\357\063\015\073\006\176\125\374
\265\140\217\166\206\022\102\175\126\146\076\210\202\355\162\143
\016\236\213\335\064\054\002\121\121\303\031\375\131\124\204\311
\361\153\263\114\260\351\350\106\135\070\306\242\247\056\021\127
\272\202\025\242\234\217\155\260\231\112\012\362\353\211\160\143
\116\171\304\267\133\275\242\135\261\362\101\002\053\255\251\072
\243\354\171\012\354\137\072\343\375\357\200\074\255\064\233\032
\253\210\046\173\126\242\202\206\037\353\065\211\203\177\137\256
\051\116\075\266\156\354\256\301\360\047\233\256\343\364\354\357
\256\177\367\206\075\162\172\353\245\373\131\116\247\353\225\214
\042\071\171\341\055\010\217\314\274\221\270\101\367\024\301\043
\251\303\255\232\105\104\263\262\327\054\315\306\051\342\120\020
\256\134\313\202\216\027\030\066\175\227\346\210\232\260\115\064
\011\364\054\271\132\146\052\260\027\233\236\036\166\235\112\146
\061\101\337\077\373\305\006\357\033\266\176\032\106\066\367\144
\143\073\343\071\030\043\347\147\165\024\325\165\127\222\067\275
\276\152\033\046\120\362\066\046\006\220\305\160\001\144\155\166
\146\341\221\333\156\007\300\141\200\056\262\056\057\214\160\247
\321\073\074\263\221\344\156\266\304\073\160\362\154\222\227\011
\315\107\175\030\300\363\273\236\017\326\213\256\007\266\132\017
\316\013\014\107\247\345\076\270\275\175\307\233\065\240\141\227
\072\101\165\027\314\053\226\167\052\222\041\036\331\225\166\040
\147\150\317\015\275\337\326\037\011\152\232\342\314\163\161\244
\057\175\022\200\267\123\060\106\136\113\124\231\017\147\311\245
\310\362\040\301\202\354\235\021\337\302\002\373\032\073\321\355
\040\232\357\145\144\222\020\015\052\342\336\160\361\030\147\202
\214\141\336\270\274\321\057\234\373\017\320\053\355\033\166\271
\344\071\125\370\370\241\035\270\252\200\000\114\202\347\262\177
\011\270\274\060\240\057\015\365\122\236\216\367\222\263\012\000
\035\000\124\227\006\340\261\007\331\307\017\134\145\175\074\155
\131\127\344\355\245\215\351\100\123\237\025\113\240\161\366\032
\041\343\332\160\006\041\130\024\207\205\167\171\252\202\171\002
\003\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004
\026\004\024\342\311\100\237\115\316\350\232\241\174\317\016\077
\145\305\051\210\152\031\121\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\003\202\002\001\000\321\111\127\340
\247\314\150\130\272\001\017\053\031\315\215\260\141\105\254\021
\355\143\120\151\370\037\177\276\026\217\375\235\353\013\252\062
\107\166\322\147\044\355\275\174\063\062\227\052\307\005\206\146
\015\027\175\024\025\033\324\353\375\037\232\366\136\227\151\267
\032\045\244\012\263\221\077\137\066\254\213\354\127\250\076\347
\201\212\030\127\071\205\164\032\102\307\351\133\023\137\217\371
\010\351\222\164\215\365\107\322\253\073\326\373\170\146\116\066

\175\371\351\222\351\004\336\375\111\143\374\155\373\024\161\223
\147\057\107\112\267\271\377\036\052\163\160\106\060\277\132\362
\057\171\245\341\215\014\331\371\262\143\067\214\067\145\205\160
\152\134\133\011\162\271\255\143\074\261\335\370\374\062\277\067
\206\344\273\216\230\047\176\272\037\026\341\160\021\362\003\337
\045\142\062\047\046\030\062\204\237\377\000\072\023\272\232\115
\364\117\270\024\160\042\261\312\053\220\316\051\301\160\364\057
\235\177\362\220\036\326\132\337\267\106\374\346\206\372\313\340
\040\166\172\272\246\313\365\174\336\142\245\261\213\356\336\202
\146\212\116\072\060\037\077\200\313\255\047\272\014\136\327\320
\261\126\312\167\161\262\265\165\241\120\251\100\103\027\302\050
\331\317\122\213\133\310\143\324\102\076\240\063\172\106\056\367
\012\040\106\124\176\152\117\061\361\201\176\102\164\070\145\163
\047\356\306\174\270\216\327\245\072\327\230\241\234\214\020\125
\323\333\113\354\100\220\362\315\156\127\322\142\016\174\127\223
\261\247\155\315\235\203\273\052\347\345\266\073\161\130\255\375
\321\105\274\132\221\356\123\025\157\323\105\011\165\156\272\220
\135\036\004\317\067\337\036\250\146\261\214\346\040\152\357\374
\110\116\164\230\102\257\051\157\056\152\307\373\175\321\146\061
\042\314\206\000\176\146\203\014\102\364\275\064\222\303\032\352
\117\312\176\162\115\013\160\214\246\110\273\246\241\024\366\373
\130\104\231\024\256\252\013\223\151\240\051\045\112\245\313\053
\335\212\146\007\026\170\025\127\161\033\354\365\107\204\363\236
\061\067\172\325\177\044\255\344\274\375\375\314\156\203\350\014
\250\267\101\154\007\335\275\074\206\227\057\322

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Trust for "GDCA TrustAUTH R5 ROOT"

Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY
CO.,LTD.",C=CN

Serial Number:7d:09:97:fe:f0:47:ea:7a

Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY
CO.,LTD.",C=CN

Not Valid Before: Wed Nov 26 05:13:15 2014

Not Valid After : Mon Dec 31 15:59:59 2040

Fingerprint (SHA-256):

BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93

Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GDCA TrustAUTH R5 ROOT"

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CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\017\066\070\133\201\032\045\303\233\061\116\203\312\351\064\146
\160\314\164\264
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\143\314\331\075\064\065\134\157\123\243\342\010\160\110\037\264
END
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
\040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
\122\117\117\124
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\175\011\227\376\360\107\352\172
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TrustCor RootCert CA-1"
#
# Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
# Serial Number:00:da:9b:ec:71:f3:03:b0:19
# Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor
Systems S. de R.L.,L=Panama City,ST=Panama,C=PA
# Not Valid Before: Thu Feb 04 12:32:16 2016
# Not Valid After : Mon Dec 31 17:23:16 2029
# Fingerprint (SHA-256):
D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C
# Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A
# For Server Distrust After: Wed Nov 30 00:00:00 2022
# For Email Distrust After: Wed Nov 30 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TrustCor RootCert CA-1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101

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\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\061

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\011\000\332\233\354\161\363\003\260\031

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\060\060\202\003\030\240\003\002\001\002\002\011\000
\332\233\354\161\363\003\260\031\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\201\244\061\013\060\011\006\003
\125\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010
\014\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004
\007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044
\060\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157
\162\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040
\122\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124
\162\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\061\037\060
\035\006\003\125\004\003\014\026\124\162\165\163\164\103\157\162
\040\122\157\157\164\103\145\162\164\040\103\101\055\061\060\036
\027\015\061\066\060\062\060\064\061\062\063\062\061\066\132\027
\015\062\071\061\062\063\061\061\067\062\063\061\066\132\060\201
\244\061\013\060\011\006\003\125\004\006\023\002\120\101\061\017
\060\015\006\003\125\004\010\014\006\120\141\156\141\155\141\061

\024\060\022\006\003\125\004\007\014\013\120\141\156\141\155\141
\040\103\151\164\171\061\044\060\042\006\003\125\004\012\014\033
\124\162\165\163\164\103\157\162\040\123\171\163\164\145\155\163
\040\123\056\040\144\145\040\122\056\114\056\061\047\060\045\006
\003\125\004\013\014\036\124\162\165\163\164\103\157\162\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\061\037\060\035\006\003\125\004\003\014\026\124
\162\165\163\164\103\157\162\040\122\157\157\164\103\145\162\164
\040\103\101\055\061\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\277\216\267\225\342\302\046\022\153\063
\031\307\100\130\012\253\131\252\215\000\243\374\200\307\120\173
\216\324\040\046\272\062\022\330\043\124\111\045\020\042\230\235
\106\322\301\311\236\116\033\056\054\016\070\363\032\045\150\034
\246\132\005\346\036\213\110\277\230\226\164\076\151\312\351\265
\170\245\006\274\325\000\136\011\012\362\047\172\122\374\055\325
\261\352\264\211\141\044\363\032\023\333\251\317\122\355\014\044
\272\271\236\354\176\000\164\372\223\255\154\051\222\256\121\264
\273\323\127\277\263\363\250\215\234\364\044\113\052\326\231\236
\364\236\376\300\176\102\072\347\013\225\123\332\267\150\016\220
\114\373\160\077\217\112\054\224\363\046\335\143\151\251\224\330
\020\116\305\107\010\220\231\033\027\115\271\154\156\357\140\225
\021\216\041\200\265\275\240\163\330\320\262\167\304\105\352\132
\046\373\146\166\166\370\006\037\141\155\017\125\305\203\267\020
\126\162\006\007\245\363\261\032\003\005\144\016\235\132\212\326
\206\160\033\044\336\376\050\212\053\320\152\260\374\172\242\334
\262\171\016\213\145\017\002\003\001\000\001\243\143\060\141\060
\035\006\003\125\035\016\004\026\004\024\356\153\111\074\172\077
\015\343\261\011\267\212\310\253\031\237\163\063\120\347\060\037
\006\003\125\035\043\004\030\060\026\200\024\356\153\111\074\172
\077\015\343\261\011\267\212\310\253\031\237\163\063\120\347\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\001\001\000\045\030\324\221\217\023\356\217\036\035\021\123
\332\055\104\051\031\240\036\153\061\236\115\016\236\255\075\134
\101\157\225\053\044\241\171\230\072\070\066\373\273\146\236\110
\377\220\220\357\075\324\270\233\264\207\165\077\040\233\316\162
\317\241\125\301\115\144\242\031\006\241\007\063\014\013\051\345
\361\352\253\243\354\265\012\164\220\307\175\162\362\327\134\237
\221\357\221\213\267\334\355\146\242\317\216\146\073\274\237\072
\002\340\047\335\026\230\300\225\324\012\244\344\201\232\165\224
\065\234\220\137\210\067\006\255\131\225\012\260\321\147\323\031
\312\211\347\062\132\066\034\076\202\250\132\223\276\306\320\144
\221\266\317\331\266\030\317\333\176\322\145\243\246\304\216\027
\061\301\373\176\166\333\323\205\343\130\262\167\172\166\073\154
\057\120\034\347\333\366\147\171\037\365\202\225\232\007\247\024
\257\217\334\050\041\147\011\322\326\115\132\034\031\034\216\167

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\134\303\224\044\075\062\153\113\176\324\170\224\203\276\067\115
\316\137\307\036\116\074\340\211\063\225\013\017\245\062\326\074
\132\171\054\031
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END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER_MULTILINE_OCTAL

```
\062\062\061\061\063\060\060\060\060\060\060\060\132
```

END

CKA_NSS_EMAIL_DISTRICT_AFTER_MULTILINE_OCTAL

```
\062\062\061\061\063\060\060\060\060\060\060\060\132
```

END

Trust for "TrustCor RootCert CA-1"

Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

#

Serial Number:00:da:9b:ec:71:f3:03:b0:19

Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

Not Valid Before: Thu Feb 04 12:32:16 2016

Not Valid After : Mon Dec 31 17:23:16 2029

Fingerprint (SHA-256):

D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C

Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TrustCor RootCert CA-1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\377\275\315\347\202\310\103\136\074\157\046\206\134\312\250\072
\105\133\303\012
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\156\205\361\334\032\000\323\042\325\262\262\254\153\067\005\105
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
```

```

\162\164\040\103\101\055\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\332\233\354\161\363\003\260\031
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TrustCor RootCert CA-2"
#
# Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor
Systems S. de R.L.,L=Panama City,ST=Panama,C=PA
# Serial Number:25:a1:df:ca:33:cb:59:02
# Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
# Not Valid Before: Thu Feb 04 12:32:23 2016
# Not Valid After : Sun Dec 31 17:26:39 2034
# Fingerprint (SHA-256):
07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65
# Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0
# For Server Distrust After: Wed Nov 30 00:00:00 2022
# For Email Distrust After: Wed Nov 30 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TrustCor RootCert CA-2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```

\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\010\045\241\337\312\063\313\131\002

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\057\060\202\004\027\240\003\002\001\002\002\010\045
\241\337\312\063\313\131\002\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\244\061\013\060\011\006\003\125
\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010\014
\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007
\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060
\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157\162
\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040\122
\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124\162
\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143\141
\164\145\040\101\165\164\150\157\162\151\164\171\061\037\060\035
\006\003\125\004\003\014\026\124\162\165\163\164\103\157\162\040
\122\157\157\164\103\145\162\164\040\103\101\055\062\060\036\027
\015\061\066\060\062\060\064\061\062\063\062\062\063\132\027\015
\063\064\061\062\063\061\061\067\062\066\063\071\132\060\201\244
\061\013\060\011\006\003\125\004\006\023\002\120\101\061\017\060
\015\006\003\125\004\010\014\006\120\141\156\141\155\141\061\024
\060\022\006\003\125\004\007\014\013\120\141\156\141\155\141\040
\103\151\164\171\061\044\060\042\006\003\125\004\012\014\033\124
\162\165\163\164\103\157\162\040\123\171\163\164\145\155\163\040
\123\056\040\144\145\040\122\056\114\056\061\047\060\045\006\003
\125\004\013\014\036\124\162\165\163\164\103\157\162\040\103\145
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162
\151\164\171\061\037\060\035\006\003\125\004\003\014\026\124\162
\165\163\164\103\157\162\040\122\157\157\164\103\145\162\164\040
\103\101\055\062\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\247\040\156\302\052\242\142\044\225\220\166
\310\070\176\200\322\253\301\233\145\005\224\364\301\012\020\325
\002\254\355\237\223\307\207\310\260\047\053\102\014\075\012\076
\101\132\236\165\335\215\312\340\233\354\150\062\244\151\222\150

\214\013\201\016\126\240\076\032\335\054\045\024\202\057\227\323
\144\106\364\124\251\334\072\124\055\061\053\231\202\362\331\052
\327\357\161\000\270\061\244\276\172\044\007\303\102\040\362\212
\324\222\004\033\145\126\114\154\324\373\266\141\132\107\043\264
\330\151\264\267\072\320\164\074\014\165\241\214\116\166\241\351
\333\052\245\073\372\316\260\377\176\152\050\375\047\034\310\261
\351\051\361\127\156\144\264\320\301\025\155\016\276\056\016\106
\310\136\364\121\376\357\016\143\072\073\161\272\317\157\131\312
\014\343\233\135\111\270\114\342\127\261\230\212\102\127\234\166
\357\357\275\321\150\250\322\364\011\273\167\065\276\045\202\010
\304\026\054\104\040\126\251\104\021\167\357\135\264\035\252\136
\153\076\213\062\366\007\057\127\004\222\312\365\376\235\302\351
\350\263\216\114\113\002\061\331\344\074\110\202\047\367\030\202
\166\110\072\161\261\023\241\071\325\056\305\064\302\035\142\205
\337\003\376\115\364\257\075\337\134\133\215\372\160\341\245\176
\047\307\206\056\152\217\022\306\204\136\103\121\120\234\031\233
\170\346\374\366\355\107\176\173\075\146\357\023\023\210\137\074
\241\143\373\371\254\207\065\237\363\202\236\244\077\012\234\061
\151\213\231\244\210\112\216\156\146\115\357\026\304\017\171\050
\041\140\015\205\026\175\327\124\070\361\222\126\375\265\063\114
\203\334\327\020\237\113\375\306\370\102\275\272\174\163\002\340
\377\175\315\133\341\324\254\141\173\127\325\112\173\133\324\205
\130\047\135\277\370\053\140\254\240\046\256\024\041\047\306\167
\232\063\200\074\136\106\077\367\303\261\243\206\063\306\350\136
\015\271\065\054\252\106\301\205\002\165\200\240\353\044\373\025
\252\344\147\177\156\167\077\364\004\212\057\174\173\343\027\141
\360\335\011\251\040\310\276\011\244\320\176\104\303\262\060\112
\070\252\251\354\030\232\007\202\053\333\270\234\030\255\332\340
\106\027\254\317\135\002\003\001\000\001\243\143\060\141\060\035
\006\003\125\035\016\004\026\004\024\331\376\041\100\156\224\236
\274\233\075\234\175\230\040\031\345\214\060\142\262\060\037\006
\003\125\035\043\004\030\060\026\200\024\331\376\041\100\156\224
\236\274\233\075\234\175\230\040\031\345\214\060\142\262\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202
\002\001\000\236\105\236\014\073\266\357\341\072\310\174\321\000
\075\317\342\352\006\265\262\072\273\006\113\150\172\320\043\227
\164\247\054\360\010\330\171\132\327\132\204\212\330\022\232\033
\331\175\134\115\160\305\245\371\253\345\243\211\211\335\001\372
\354\335\371\351\222\227\333\260\106\102\363\323\142\252\225\376
\061\147\024\151\130\220\012\252\013\356\067\043\307\120\121\264
\365\176\236\343\173\367\344\314\102\062\055\111\014\313\377\111
\014\233\036\064\375\156\156\226\212\171\003\266\157\333\011\313
\375\137\145\024\067\341\070\365\363\141\026\130\344\265\155\015
\013\004\033\077\120\055\177\263\307\172\032\026\200\140\370\212
\037\351\033\052\306\371\272\001\032\151\277\322\130\307\124\127
\010\217\341\071\140\167\113\254\131\204\032\210\361\335\313\117


```
\170\327\347\341\063\055\374\356\101\372\040\260\276\313\367\070
\224\300\341\320\205\017\273\355\054\163\253\355\376\222\166\032
\144\177\133\015\063\011\007\063\173\006\077\021\244\134\160\074
\205\300\317\343\220\250\203\167\372\333\346\305\214\150\147\020
\147\245\122\055\360\304\231\217\177\277\321\153\342\265\107\326
\331\320\205\231\115\224\233\017\113\215\356\000\132\107\035\021
\003\254\101\030\257\207\267\157\014\072\217\312\317\334\003\301
\242\011\310\345\375\200\136\310\140\102\001\033\032\123\132\273
\067\246\267\274\272\204\351\036\154\032\324\144\332\324\103\376
\223\213\113\362\054\171\026\020\324\223\013\210\217\241\330\206
\024\106\221\107\233\050\044\357\127\122\116\134\102\234\252\367
\111\354\047\350\100\036\263\246\211\042\162\234\365\015\063\264
\130\243\060\073\335\324\152\124\223\276\032\115\363\223\224\367
\374\204\013\077\204\040\134\064\003\104\305\332\255\274\012\301
\002\317\036\345\224\331\363\216\133\330\114\360\235\354\141\027
\273\024\062\124\014\002\051\223\036\222\206\366\177\357\347\222
\005\016\131\335\231\010\056\056\372\234\000\122\323\305\146\051
\344\247\227\104\244\016\050\201\023\065\305\366\157\144\346\101
\304\325\057\314\064\105\045\317\101\000\226\075\112\056\302\226
\230\117\116\112\234\227\267\333\037\222\062\310\377\017\121\156
\326\354\011
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER MULTILINE_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\060\132

END

CKA_NSS_EMAIL_DISTRICT_AFTER

MULTILINE_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\060\132

END

Trust for "TrustCor RootCert CA-2"

Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA

Serial Number:25:a1:df:ca:33:cb:59:02

Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA

Not Valid Before: Thu Feb 04 12:32:23 2016

Not Valid After : Sun Dec 31 17:26:39 2034

Fingerprint (SHA-256):

07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65

Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TrustCor RootCert CA-2"

```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\270\276\155\313\126\361\125\271\143\324\022\312\116\006\064\307
\224\262\034\300
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\242\341\370\030\013\272\105\325\307\101\052\273\067\122\105\144
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145
\162\164\040\103\101\055\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\045\241\337\312\063\313\131\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TrustCor ECA-1"
#
# Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama
City,ST=Panama,C=PA
# Serial Number:00:84:82:2c:5f:1c:62:d0:40
# Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama
City,ST=Panama,C=PA
# Not Valid Before: Thu Feb 04 12:32:33 2016
# Not Valid After : Mon Dec 31 17:28:07 2029
# Fingerprint (SHA-256):
5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C
# Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD
# For Server Distrust After: Wed Nov 30 00:00:00 2022
# For Email Distrust After: Wed Nov 30 00:00:00 2022
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"TrustCor ECA-1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\011\000\204\202\054\137\034\142\320\100
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\040\060\202\003\010\240\003\002\001\002\002\011\000
\204\202\054\137\034\142\320\100\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\201\234\061\013\060\011\006\003
\125\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010
\014\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004
\007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044
\060\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157
\162\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040
\122\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124
\162\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\061\027\060
\025\006\003\125\004\003\014\016\124\162\165\163\164\103\157\162
\040\105\103\101\055\061\060\036\027\015\061\066\060\062\060\064
\061\062\063\062\063\063\132\027\015\062\071\061\062\063\061\061
```

\067\062\070\060\067\132\060\201\234\061\013\060\011\006\003\125
\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010\014
\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007
\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060
\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157\162
\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040\122
\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124\162
\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143\141
\164\145\040\101\165\164\150\157\162\151\164\171\061\027\060\025
\006\003\125\004\003\014\016\124\162\165\163\164\103\157\162\040
\105\103\101\055\061\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\317\217\340\021\265\237\250\166\166\333
\337\017\124\357\163\143\051\202\255\107\306\243\153\355\376\137
\063\370\103\121\351\032\063\221\061\027\240\164\304\324\247\001
\346\262\222\076\152\235\355\016\371\164\230\100\323\077\003\200
\006\202\100\350\261\342\247\121\247\035\203\046\153\253\336\372
\027\221\053\330\306\254\036\261\236\031\001\325\227\246\352\015
\267\304\125\037\047\174\322\010\325\166\037\051\025\207\100\071
\335\070\105\021\165\320\232\247\064\340\277\315\310\122\035\271
\107\176\015\270\273\306\014\366\163\127\026\132\176\103\221\037
\125\072\306\155\104\004\252\234\251\234\247\114\211\027\203\256
\243\004\136\122\200\213\036\022\045\021\031\327\014\175\175\061
\104\101\352\333\257\260\034\357\201\320\054\305\232\041\233\075
\355\102\073\120\046\362\354\316\161\141\006\142\041\124\116\177
\301\235\076\177\040\214\200\313\052\330\227\142\310\203\063\221
\175\260\242\132\017\127\350\073\314\362\045\262\324\174\057\354
\115\306\241\072\025\172\347\266\135\065\365\366\110\112\066\105
\146\324\272\230\130\301\002\003\001\000\001\243\143\060\141\060
\035\006\003\125\035\016\004\026\004\024\104\236\110\365\314\155
\110\324\240\113\177\376\131\044\057\203\227\231\232\206\060\037
\006\003\125\035\043\004\030\060\026\200\024\104\236\110\365\314
\155\110\324\240\113\177\376\131\044\057\203\227\231\232\206\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\001\001\000\005\076\065\134\025\160\233\311\307\163\141\157
\162\053\324\302\217\362\103\135\002\316\304\224\271\224\021\203
\147\135\342\147\154\165\166\277\273\014\252\066\306\255\107\223
\143\334\036\176\326\336\056\376\351\031\062\070\003\177\024\366
\000\163\054\131\261\041\006\341\373\254\030\225\014\243\377\231
\226\367\053\047\233\325\044\314\035\335\301\072\340\230\104\260
\304\344\076\167\261\163\251\144\054\366\034\001\174\077\135\105
\205\300\205\347\045\217\225\334\027\363\074\237\032\156\260\312
\343\035\052\351\114\143\372\044\141\142\326\332\176\266\034\154
\365\002\035\324\052\335\125\220\353\052\021\107\074\056\136\164
\262\202\042\245\175\123\037\105\354\047\221\175\347\042\026\350
\300\150\066\330\306\361\117\200\104\062\371\341\321\321\035\252

```
\336\250\253\234\004\257\255\040\016\144\230\115\245\153\300\110
\130\226\151\115\334\007\214\121\223\242\337\237\017\075\213\140
\264\202\215\252\010\116\142\105\340\371\013\322\340\340\074\133
\336\134\161\047\045\302\346\003\201\213\020\123\343\307\125\242
\264\237\327\346
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER MULTILINE_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\060\132

END

CKA_NSS_EMAIL_DISTRUST_AFTER

MULTILINE_OCTAL

\062\062\061\061\063\060\060\060\060\060\060\060\132

END

Trust for "TrustCor ECA-1"

Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

Serial Number:00:84:82:2c:5f:1c:62:d0:40

Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

Not Valid Before: Thu Feb 04 12:32:33 2016

Not Valid After : Mon Dec 31 17:28:07 2029

Fingerprint (SHA-256):

5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C

Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TrustCor ECA-1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\130\321\337\225\225\147\153\143\300\360\133\034\027\115\213\204
\013\310\170\275

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

\047\222\043\035\012\365\100\174\351\346\153\235\330\365\347\154

END

CKA_ISSUER MULTILINE_OCTAL

\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162

```
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\011\000\204\202\054\137\034\142\320\100
```

```
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_CODE_SIGNING
```

```
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
```

```
# Certificate "SSL.com Root Certification Authority RSA"
```

```
#
```

```
# Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
```

```
# Serial Number:7b:2c:9b:d3:16:80:32:99
```

```
# Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
```

```
# Not Valid Before: Fri Feb 12 17:39:39 2016
```

```
# Not Valid After : Tue Feb 12 17:39:39 2041
```

```
# Fingerprint (SHA-256):
```

```
85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69
```

```
# Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "SSL.com Root Certification Authority RSA"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
```

\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\010\173\054\233\323\026\200\062\231

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\335\060\202\003\305\240\003\002\001\002\002\010\173
\054\233\323\026\200\062\231\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\174\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014\005
\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014\007
\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004\012
\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157
\156\061\061\060\057\006\003\125\004\003\014\050\123\123\114\056
\143\157\155\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\122\123\101\060\036\027\015\061\066\060\062\061\062\061\067
\063\071\063\071\132\027\015\064\061\060\062\061\062\061\067\063
\071\063\071\132\060\174\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145
\170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157
\165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017
\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061
\061\060\057\006\003\125\004\003\014\050\123\123\114\056\143\157
\155\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\371\017\335\243\053\175\313\320\052\376\354\147\205
\246\347\056\033\272\167\341\343\365\257\244\354\372\112\135\221
\304\127\107\153\030\167\153\166\362\375\223\344\075\017\302\026
\236\013\146\303\126\224\236\027\203\205\316\126\357\362\026\375
\000\142\365\042\011\124\350\145\027\116\101\271\340\117\106\227
\252\033\310\270\156\142\136\151\261\137\333\052\002\176\374\154
\312\363\101\330\355\320\350\374\077\141\110\355\260\003\024\035
\020\016\113\031\340\273\116\354\206\145\377\066\363\136\147\002
\013\235\206\125\141\375\172\070\355\376\342\031\000\267\157\241
\120\142\165\164\074\240\372\310\045\222\264\156\172\042\307\370
\036\241\343\262\335\221\061\253\053\035\004\377\245\112\004\067
\351\205\244\063\053\375\342\326\125\064\174\031\244\112\150\307
\262\250\323\267\312\241\223\210\353\301\227\274\214\371\035\331
\042\204\044\164\307\004\075\152\251\051\223\314\353\270\133\341
\376\137\045\252\064\130\310\301\043\124\235\033\230\021\303\070
\234\176\075\206\154\245\017\100\206\174\002\364\134\002\117\050
\313\256\161\237\017\072\310\063\376\021\045\065\352\374\272\305

\140\075\331\174\030\325\262\251\323\165\170\003\162\042\312\072
\303\037\357\054\345\056\251\372\236\054\266\121\106\375\257\003
\326\352\140\150\352\205\026\066\153\205\351\036\300\263\335\304
\044\334\200\052\201\101\155\224\076\310\340\311\201\101\000\236
\136\277\177\305\010\230\242\030\054\102\100\263\371\157\070\047
\113\116\200\364\075\201\107\340\210\174\352\034\316\265\165\134
\121\056\034\053\177\032\162\050\347\000\265\321\164\306\327\344
\237\255\007\223\266\123\065\065\374\067\344\303\366\135\026\276
\041\163\336\222\012\370\240\143\152\274\226\222\152\076\370\274
\145\125\233\336\365\015\211\046\004\374\045\032\246\045\151\313
\302\155\312\174\342\131\137\227\254\353\357\056\310\274\327\033
\131\074\053\314\362\031\310\223\153\047\143\031\317\374\351\046
\370\312\161\233\177\223\376\064\147\204\116\231\353\374\263\170
\011\063\160\272\146\246\166\355\033\163\353\032\245\015\304\042
\023\040\224\126\012\116\054\154\116\261\375\317\234\011\272\242
\063\355\207\002\003\001\000\001\243\143\060\141\060\035\006\003
\125\035\016\004\026\004\024\335\004\011\007\242\365\172\175\122
\123\022\222\225\356\070\200\045\015\246\131\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003
\125\035\043\004\030\060\026\200\024\335\004\011\007\242\365\172
\175\122\123\022\222\225\356\070\200\045\015\246\131\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\015\006
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001
\000\040\030\021\224\051\373\046\235\034\036\036\160\141\361\225
\162\223\161\044\255\150\223\130\216\062\257\033\263\160\003\374
\045\053\164\205\220\075\170\152\364\271\213\245\227\073\265\030
\221\273\036\247\371\100\133\221\371\125\231\257\036\021\320\134
\035\247\146\343\261\224\007\014\062\071\246\352\033\260\171\330
\035\234\160\104\343\212\335\304\371\225\037\212\070\103\077\001
\205\245\107\247\075\106\262\274\345\042\150\367\173\234\330\054
\076\012\041\310\055\063\254\277\305\201\231\061\164\301\165\161
\305\276\261\360\043\105\364\235\153\374\031\143\235\243\274\004
\306\030\013\045\273\123\211\017\263\200\120\336\105\356\104\177
\253\224\170\144\230\323\366\050\335\207\330\160\145\164\373\016
\271\023\353\247\017\141\251\062\226\314\336\273\355\143\114\030
\273\251\100\367\240\124\156\040\210\161\165\030\352\172\264\064
\162\340\043\047\167\134\266\220\352\206\045\100\253\357\063\017
\313\237\202\276\242\040\373\366\265\055\032\346\302\205\261\164
\017\373\310\145\002\244\122\001\107\335\111\042\301\277\330\353
\153\254\176\336\354\143\063\025\267\043\010\217\306\017\215\101
\132\335\216\305\271\217\345\105\077\170\333\272\322\033\100\261
\376\161\115\077\340\201\242\272\136\264\354\025\340\223\335\010
\037\176\341\125\231\013\041\336\223\236\012\373\346\243\111\275
\066\060\376\347\167\262\240\165\227\265\055\201\210\027\145\040
\367\332\220\000\237\311\122\314\062\312\065\174\365\075\017\330
\053\327\365\046\154\311\006\064\226\026\352\160\131\032\062\171
\171\013\266\210\177\017\122\110\075\277\154\330\242\104\056\321
\116\267\162\130\323\211\023\225\376\104\253\370\327\213\033\156


```
\234\274\054\240\133\325\152\000\257\137\067\341\325\372\020\013
\230\234\206\347\046\217\316\360\354\156\212\127\013\200\343\116
\262\300\240\143\141\220\272\125\150\067\164\152\266\222\333\237
\241\206\042\266\145\047\016\354\266\237\102\140\344\147\302\265
\332\101\013\304\323\213\141\033\274\372\037\221\053\327\104\007
\136\272\051\254\331\305\351\357\123\110\132\353\200\361\050\130
\041\315\260\006\125\373\047\077\123\220\160\251\004\036\127\047
\271
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "SSL.com Root Certification Authority RSA"

Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

Serial Number:7b:2c:9b:d3:16:80:32:99

Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

Not Valid Before: Fri Feb 12 17:39:39 2016

Not Valid After : Tue Feb 12 17:39:39 2041

Fingerprint (SHA-256):

85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69

Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN

CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SSL.com Root Certification Authority RSA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\267\253\063\010\321\352\104\167\272\024\200\022\132\157\275\251
\066\111\014\273
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\206\151\022\300\160\361\354\254\254\302\325\274\245\133\241\051
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\010\173\054\233\323\026\200\062\231
```

```

END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SSL.com Root Certification Authority ECC"
#
# Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:75:e6:df:cb:c1:68:5b:a8
# Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 18:14:03 2016
# Not Valid After : Tue Feb 12 18:14:03 2041
# Fingerprint (SHA-256):
34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65
# Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority ECC"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_SERIAL_NUMBER

```

MULTILINE_OCTAL

\002\010\165\346\337\313\301\150\133\250

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\215\060\202\002\024\240\003\002\001\002\002\010\165
\346\337\313\301\150\133\250\060\012\006\010\052\206\110\316\075
\004\003\002\060\174\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145\170
\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157\165
\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017\123
\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\061
\060\057\006\003\125\004\003\014\050\123\123\114\056\143\157\155
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103\060\036\027\015\061\066\060\062\061\062\061\070\061\064\060
\063\132\027\015\064\061\060\062\061\062\061\070\061\064\060\063
\132\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057
\006\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\105\103\103\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\105\156\251\120\304\246\043\066\236
\137\050\215\027\313\226\042\144\077\334\172\216\035\314\010\263
\242\161\044\272\216\111\271\004\033\107\226\130\253\055\225\310
\355\236\010\065\310\047\353\211\214\123\130\353\142\212\376\360
\133\017\153\061\122\143\101\073\211\315\354\354\266\215\031\323
\064\007\334\273\306\006\177\302\105\225\354\313\177\250\043\340
\011\351\201\372\363\107\323\243\143\060\141\060\035\006\003\125
\035\016\004\026\004\024\202\321\205\163\060\347\065\004\323\216
\002\222\373\345\244\321\304\041\350\315\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125
\035\043\004\030\060\026\200\024\202\321\205\163\060\347\065\004
\323\216\002\222\373\345\244\321\304\041\350\315\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\206\060\012\006\010
\052\206\110\316\075\004\003\002\003\147\000\060\144\002\060\157
\347\353\131\021\244\140\317\141\260\226\173\355\005\371\057\023
\221\334\355\345\374\120\153\021\106\106\263\034\041\000\142\273
\276\303\347\350\315\007\231\371\015\013\135\162\076\304\252\002
\060\037\274\272\013\342\060\044\373\174\155\200\125\012\231\076
\200\015\063\345\146\243\263\243\273\245\325\213\217\011\054\246
\135\176\342\360\007\010\150\155\322\174\151\156\137\337\345\152
\145

END

CKA_NSS_MOZILLA_CA_POLICY

```
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER
CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "SSL.com Root Certification Authority ECC"
# Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:75:e6:df:cb:c1:68:5b:a8
# Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 18:14:03 2016
# Not Valid After : Tue Feb 12 18:14:03 2041
# Fingerprint (SHA-256):
34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65
# Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority ECC"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\303\031\174\071\044\346\124\257\033\304\253\040\225\172\342\303
\016\023\002\152
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\056\332\344\071\177\234\217\067\321\160\237\046\027\121\072\216
END
CKA_ISSUER
MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\165\346\337\313\301\150\133\250
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "SSL.com EV Root Certification Authority RSA R2"
#
```

```
# Issuer: CN=SSL.com EV Root
Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:56:b6:29:cd:34:bc:78:f6
# Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL
Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Wed May 31 18:14:37 2017
# Not Valid After : Fri May 30 18:14:37 2042
# Fingerprint (SHA-256):
2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C
# Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\126\266\051\315\064\274\170\366
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\005\353\060\202\003\323\240\003\002\001\002\002\010\126
\266\051\315\064\274\170\366\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\202\061\013\060\011\006\003\125
```

\004\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014
\005\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014
\007\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004
\012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151
\157\156\061\067\060\065\006\003\125\004\003\014\056\123\123\114
\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\040\122\123\101\040\122\062\060\036\027\015\061
\067\060\065\063\061\061\070\061\064\063\067\132\027\015\064\062
\060\065\063\060\061\070\061\064\063\067\132\060\201\202\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\016\060\014\006
\003\125\004\010\014\005\124\145\170\141\163\061\020\060\016\006
\003\125\004\007\014\007\110\157\165\163\164\157\156\061\030\060
\026\006\003\125\004\012\014\017\123\123\114\040\103\157\162\160
\157\162\141\164\151\157\156\061\067\060\065\006\003\125\004\003
\014\056\123\123\114\056\143\157\155\040\105\126\040\122\157\157
\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\040\122\123\101\040\122\062
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\217\066\145\100\341\326\115\300\327\264\351\106\332\153\352
\063\107\315\114\371\175\175\276\275\055\075\360\333\170\341\206
\245\331\272\011\127\150\355\127\076\240\320\010\101\203\347\050
\101\044\037\343\162\025\320\001\032\373\136\160\043\262\313\237
\071\343\317\305\116\306\222\155\046\306\173\273\263\332\047\235
\012\206\351\201\067\005\376\360\161\161\354\303\034\351\143\242
\027\024\235\357\033\147\323\205\125\002\002\326\111\311\314\132
\341\261\367\157\062\237\311\324\073\210\101\250\234\275\313\253
\333\155\173\011\037\242\114\162\220\332\053\010\374\317\074\124
\316\147\017\250\317\135\226\031\013\304\343\162\353\255\321\175
\035\047\357\222\353\020\277\133\353\073\257\317\200\335\301\322
\226\004\133\172\176\244\251\074\070\166\244\142\216\240\071\136
\352\167\317\135\000\131\217\146\054\076\007\242\243\005\046\021
\151\227\352\205\267\017\226\013\113\310\100\341\120\272\056\212
\313\367\017\232\042\347\177\232\067\023\315\362\115\023\153\041
\321\300\314\042\362\241\106\366\104\151\234\312\141\065\007\000
\157\326\141\010\021\352\272\270\366\351\263\140\345\115\271\354
\237\024\146\311\127\130\333\315\207\151\370\212\206\022\003\107
\277\146\023\166\254\167\175\064\044\205\203\315\327\252\234\220
\032\237\041\054\177\170\267\144\270\330\350\246\364\170\263\125
\313\204\322\062\304\170\256\243\217\141\335\316\010\123\255\354
\210\374\025\344\232\015\346\237\032\167\316\114\217\270\024\025
\075\142\234\206\070\006\000\146\022\344\131\166\132\123\300\002
\230\242\020\053\150\104\173\216\171\316\063\112\166\252\133\201
\026\033\265\212\330\320\000\173\136\142\264\011\326\206\143\016
\246\005\225\111\272\050\213\210\223\262\064\034\330\244\125\156
\267\034\320\336\231\125\073\043\364\042\340\371\051\146\046\354
\040\120\167\333\112\013\217\276\345\002\140\160\101\136\324\256

\120\071\042\024\046\313\262\073\163\164\125\107\007\171\201\071
\250\060\023\104\345\004\212\256\226\023\045\102\017\271\123\304
\233\374\315\344\034\336\074\372\253\326\006\112\037\147\246\230
\060\034\335\054\333\334\030\225\127\146\306\377\134\213\126\365
\167\002\003\001\000\001\243\143\060\141\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125
\035\043\004\030\060\026\200\024\371\140\273\324\343\325\064\366
\270\365\006\200\045\247\163\333\106\151\250\236\060\035\006\003
\125\035\016\004\026\004\024\371\140\273\324\343\325\064\366\270
\365\006\200\045\247\163\333\106\151\250\236\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\126
\263\216\313\012\235\111\216\277\244\304\221\273\146\027\005\121
\230\165\373\345\120\054\172\236\361\024\372\253\323\212\076\377
\221\051\217\143\213\330\264\251\124\001\015\276\223\206\057\371
\112\155\307\136\365\127\371\312\125\034\022\276\107\017\066\305
\337\152\267\333\165\302\107\045\177\271\361\143\370\150\055\125
\004\321\362\215\260\244\317\274\074\136\037\170\347\245\240\040
\160\260\004\305\267\367\162\247\336\042\015\275\063\045\106\214
\144\222\046\343\076\056\143\226\332\233\214\075\370\030\011\327
\003\314\175\206\202\340\312\004\007\121\120\327\377\222\325\014
\357\332\206\237\231\327\353\267\257\150\342\071\046\224\272\150
\267\277\203\323\352\172\147\075\142\147\256\045\345\162\350\342
\344\354\256\022\366\113\053\074\237\351\260\100\363\070\124\263
\375\267\150\310\332\306\217\121\074\262\373\221\334\034\347\233
\235\341\267\015\162\217\342\244\304\251\170\371\353\024\254\306
\103\005\302\145\071\050\030\002\303\202\262\235\005\276\145\355
\226\137\145\164\074\373\011\065\056\173\234\023\375\033\017\135
\307\155\201\072\126\017\314\073\341\257\002\057\042\254\106\312
\106\074\240\034\114\326\104\264\136\056\134\025\146\011\341\046
\051\376\306\122\141\272\261\163\377\303\014\234\345\154\152\224
\077\024\312\100\026\225\204\363\131\251\254\137\114\141\223\155
\321\073\314\242\225\014\042\246\147\147\104\056\271\331\322\212
\101\263\146\013\132\373\175\043\245\362\032\260\377\336\233\203
\224\056\321\077\337\222\267\221\257\005\073\145\307\240\154\261
\315\142\022\303\220\033\343\045\316\064\274\157\167\166\261\020
\303\367\005\032\300\326\257\164\142\110\027\167\222\151\220\141
\034\336\225\200\164\124\217\030\034\303\363\003\320\277\244\103
\165\206\123\030\172\012\056\011\034\066\237\221\375\202\212\042
\113\321\016\120\045\335\313\003\014\027\311\203\000\010\116\065
\115\212\213\355\360\002\224\146\054\104\177\313\225\047\226\027
\255\011\060\254\266\161\027\156\213\027\366\034\011\324\055\073
\230\245\161\323\124\023\331\140\363\365\113\146\117\372\361\356
\040\022\215\264\254\127\261\105\143\241\254\166\251\302\373

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "SSL.com EV Root Certification Authority RSA R2"

Issuer: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US

Serial Number:56:b6:29:cd:34:bc:78:f6

Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL

Corporation,L=Houston,ST=Texas,C=US

Not Valid Before: Wed May 31 18:14:37 2017

Not Valid After : Fri May 30 18:14:37 2042

Fingerprint (SHA-256):

2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C

Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\164\072\360\122\233\320\062\240\364\112\203\315\324\272\251\173
\174\056\304\232

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\341\036\061\130\032\256\124\123\002\366\027\152\021\173\115\225

END

CKA_ISSUER MULTILINE_OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105
\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\010\126\266\051\315\064\274\170\366

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "SSL.com EV Root Certification Authority ECC"

#


```
# Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:2c:29:9c:5b:16:ed:05:95
# Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 18:15:23 2016
# Not Valid After : Tue Feb 12 18:15:23 2041
# Fingerprint (SHA-256):
22:A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8
# Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification
Authority ECC"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\054\051\234\133\026\355\005\225
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\224\060\202\002\032\240\003\002\001\002\002\010\054
\051\234\133\026\355\005\225\060\012\006\010\052\206\110\316\075
\004\003\002\060\177\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145\170
\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157\165
```

\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017\123
\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\064
\060\062\006\003\125\004\003\014\053\123\123\114\056\143\157\155
\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\105\103\103\060\036\027\015\061\066\060\062\061\062\061\070
\061\065\062\063\132\027\015\064\061\060\062\061\062\061\070\061
\065\062\063\132\060\177\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145
\170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157
\165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017
\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061
\064\060\062\006\003\125\004\003\014\053\123\123\114\056\143\157
\155\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\105\103\103\060\166\060\020\006\007\052\206\110\316\075
\002\001\006\005\053\201\004\000\042\003\142\000\004\252\022\107
\220\230\033\373\357\303\100\007\203\040\116\361\060\202\242\006
\321\362\222\206\141\362\366\041\150\312\000\304\307\352\103\000
\124\206\334\375\037\337\000\270\101\142\134\334\160\026\062\336
\037\231\324\314\305\007\310\010\037\141\026\007\121\075\175\134
\007\123\343\065\070\214\337\315\237\331\056\015\112\266\031\056
\132\160\132\006\355\276\360\241\260\312\320\011\051\243\143\060
\141\060\035\006\003\125\035\016\004\026\004\024\133\312\136\345
\336\322\201\252\315\250\055\144\121\266\331\162\233\227\346\117
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\037\006\003\125\035\043\004\030\060\026\200\024\133\312
\136\345\336\322\201\252\315\250\055\144\121\266\331\162\233\227
\346\117\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\206\060\012\006\010\052\206\110\316\075\004\003\002\003\150
\000\060\145\002\061\000\212\346\100\211\067\353\351\325\023\331
\312\324\153\044\363\260\075\207\106\130\032\354\261\337\157\373
\126\272\160\153\307\070\314\350\261\214\117\017\367\361\147\166
\016\203\320\036\121\217\002\060\075\366\043\050\046\114\306\140
\207\223\046\233\262\065\036\272\326\367\074\321\034\316\372\045
\074\246\032\201\025\133\363\022\017\154\356\145\212\311\207\250
\371\007\340\142\232\214\134\112

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "SSL.com EV Root Certification Authority ECC"

Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

Serial Number:2c:29:9c:5b:16:ed:05:95

Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

Not Valid Before: Fri Feb 12 18:15:23 2016

```
# Not Valid After : Tue Feb 12 18:15:23 2041
# Fingerprint (SHA-256):
22:A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8
# Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification Authority ECC"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\114\335\121\243\321\365\040\062\024\260\306\305\062\043\003\221
\307\106\102\155
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\131\123\042\145\203\102\001\124\300\316\102\271\132\174\362\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\054\051\234\133\026\355\005\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
#
Certificate "GlobalSign Root CA - R6"
#
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
# Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
# Not Valid Before: Wed Dec 10 00:00:00 2014
# Not Valid After : Sun Dec 10 00:00:00 2034
# Fingerprint (SHA-256):
2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69
# Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA - R6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\016\105\346\273\003\203\063\303\205\145\110\346\377\105\121
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\203\060\202\003\153\240\003\002\001\002\002\016\105
\346\273\003\203\063\303\205\145\110\346\377\105\121\060\015\006
\011\052\206\110\206\367\015\001\001\014\005\000\060\114\061\040
\060\036\006\003\125\004\013\023\027\107\154\157\142\141\154\123
\151\147\156\040\122\157\157\164\040\103\101\040\055\040\122\066
\061\023\060\021\006\003\125\004\012\023\012\107\154\157\142\141
\154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012
\107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\064
\061\062\061\060\060\060\060\060\060\060\132\027\015\063\064\061
\062\061\060\060\060\060\060\060\060\132\060\114\061\040\060\036
\006\003\125\004\013\023\027\107\154\157\142\141\154\123\151\147
\156\040\122\157\157\164\040\103\101\040\055\040\122\066\061\023
\060\021\006\003\125\004\012\023\012\107\154\157\142\141\154\123
\151\147\156\061\023\060\021\006\003\125\004\003\023\012\107\154
\157\142\141\154\123\151\147\156\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\225\007\350\163\312\146\371
\354\024\312\173\074\367\015\010\361\264\105\013\054\202\264\110
\306\353\133\074\256\203\270\101\222\063\024\244\157\177\351\052
\314\306\260\210\153\305\266\211\321\306\262\377\024\316\121\024
\041\354\112\335\033\132\306\326\207\356\115\072\025\006\355\144
\146\013\222\200\312\104\336\163\224\116\363\247\211\177\117\170
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\143\010\310\022\120\155\102\146\057\115\271\171\050\115\122\032
\212\032\200\267\031\201\016\176\304\212\274\144\114\041\034\103
\150\327\075\074\212\305\262\146\325\220\232\267\061\006\305\276
\342\155\062\006\246\036\371\271\353\252\243\270\277\276\202\143
\120\320\360\030\211\337\344\017\171\365\352\242\037\052\322\160
\056\173\347\274\223\273\155\123\342\110\174\214\020\007\070\377
\146\262\167\141\176\340\352\214\074\252\264\244\366\363\225\112
\022\007\155\375\214\262\211\317\320\240\141\167\310\130\164\260
\324\043\072\367\135\072\312\242\333\235\011\336\135\104\055\220
\361\201\315\127\222\372\176\274\120\004\143\064\337\153\223\030
\276\153\066\262\071\344\254\044\066\267\360\357\266\034\023\127
\223\266\336\262\370\342\205\267\163\242\270\065\252\105\362\340
\235\066\241\157\124\212\361\162\126\156\056\210\305\121\102\104
\025\224\356\243\305\070\226\233\116\116\132\013\107\363\006\066
\111\167\060\274\161\067\345\246\354\041\010\165\374\346\141\026
\077\167\325\331\221\227\204\012\154\324\002\115\164\300\024\355
\375\071\373\203\362\136\024\241\004\260\013\351\376\356\217\341
\156\013\262\010\263\141\146\011\152\261\006\072\145\226\131\300
\360\065\375\311\332\050\215\032\021\207\160\201\012\250\232\165
\035\236\072\206\005\000\236\333\200\326\045\371\334\005\236\047
\131\114\166\071\133\352\371\245\241\330\203\017\321\377\337\060
\021\371\205\317\063\110\365\312\155\144\024\054\172\130\117\323
\113\010\111\305\225\144\032\143\016\171\075\365\263\214\312\130
\255\234\102\105\171\156\016\207\031\134\124\261\145\266\277\214
\233\334\023\351\015\157\270\056\334\147\156\311\213\021\265\204
\024\212\000\031\160\203\171\221\227\221\324\032\047\277\067\036
\062\007\330\024\143\074\050\114\257\002\003\001\000\001\243\143
\060\141\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\256\154
\005\243\223\023\342\242\347\342\327\034\326\307\360\177\310\147
\123\240\060\037\006\003\125\035\043\004\030\060\026\200\024\256
\154\005\243\223\023\342\242\347\342\327\034\326\307\360\177\310
\147\123\240\060\015\006\011\052\206\110\206\367\015\001\001\014
\005\000\003\202\002\001\000\203\045\355\350\321\375\225\122\315
\236\300\004\240\221\151\346\134\320\204\336\334\255\242\117\350
\107\170\326\145\230\251\133\250\074\207\174\002\212\321\156\267
\026\163\346\137\300\124\230\325\164\276\301\315\342\021\221\255
\043\030\075\335\341\162\104\226\264\225\136\300\173\216\231\170
\026\103\023\126\127\263\242\263\073\265\167\334\100\162\254\243
\353\233\065\076\261\010\041\241\347\304\103\067\171\062\276\265
\347\234\054\114\274\103\051\231\216\060\323\254\041\340\343\035
\372\330\007\063\166\124\000\042\052\271\115\040\056\160\150\332
\345\123\374\203\134\323\235\362\377\104\014\104\146\362\322\343
\275\106\000\032\155\002\272\045\135\215\241\061\121\335\124\106
\034\115\333\231\226\357\032\034\004\134\246\025\357\170\340\171
\376\135\333\076\252\114\125\375\232\025\251\157\341\246\373\337
\160\060\351\303\356\102\106\355\302\223\005\211\372\175\143\173

```
\077\320\161\201\174\000\350\230\256\016\170\064\303\045\373\257
\012\237\040\153\335\073\023\217\022\214\342\101\032\110\172\163
\240\167\151\307\266\134\177\202\310\036\376\130\033\050\053\250
\154\255\136\155\300\005\322\173\267\353\200\376\045\067\376\002
\233\150\254\102\135\303\356\365\314\334\360\120\165\322\066\151
\234\346\173\004\337\156\006\151\266\336\012\011\110\131\207\353
\173\024\140\172\144\252\151\103\357\221\307\114\354\030\335\154
\357\123\055\214\231\341\136\362\162\076\317\124\310\275\147\354
\244\017\114\105\377\323\271\060\043\007\114\217\020\277\206\226
\331\231\132\264\231\127\034\244\314\273\025\211\123\272\054\005
\017\344\304\236\031\261\030\064\325\114\235\272\355\367\037\257
\044\225\004\170\250\003\273\356\201\345\332\137\174\213\112\241
\220\164\045\247\263\076\113\310\054\126\275\307\310\357\070\342
\134\222\360\171\367\234\204\272\164\055\141\001\040\176\176\321
\362\117\007\131\137\213\055\103\122\353\106\014\224\341\365\146
\107\171\167\325\124\133\037\255\044\067\313\105\132\116\240\104
\110\310\330\260\231\305\025\204\011\366\326\111\111\300\145\270
\346\032\161\156\240\250\361\202\350\105\076\154\326\002\327\012
\147\203\005\132\311\244\020
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GlobalSign Root CA - R6"

Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6

Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51

Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6

Not Valid Before: Wed Dec 10 00:00:00 2014

Not Valid After : Sun Dec 10 00:00:00 2034

Fingerprint (SHA-256):

2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69

Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Root CA - R6"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\200\224\144\016\265\247\241\312\021\234\037\335\325\237\201\002
\143\247\373\321
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\117\335\007\344\324\042\144\071\036\014\067\102\352\321\306\256
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\016\105\346\273\003\203\063\303\205\145\110\346\377\105\121
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST

CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "OISTE WISeKey Global Root GC CA"

#

Issuer: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea

Subject: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

Not Valid Before: Tue May 09 09:48:34 2017

Not Valid After : Fri May 09 09:58:33 2042

Fingerprint (SHA-256):

85:60:F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D

Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "OISTE WISeKey Global Root GC CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
```

\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055
\072\352
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\151\060\202\001\357\240\003\002\001\002\002\020\041
\052\126\014\256\332\014\253\100\105\277\053\242\055\072\352\060
\012\006\010\052\206\110\316\075\004\003\003\060\155\061\013\060
\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006\003
\125\004\012\023\007\127\111\123\145\113\145\171\061\042\060\040
\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165
\156\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144
\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105
\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040
\122\157\157\164\040\107\103\040\103\101\060\036\027\015\061\067
\060\065\060\071\060\071\064\070\063\064\132\027\015\064\062\060
\065\060\071\060\071\065\070\063\063\132\060\155\061\013\060\011
\006\003\125\004\006\023\002\103\110\061\020\060\016\006\003\125
\004\012\023\007\127\111\123\145\113\145\171\061\042\060\040\006
\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165\156
\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061
\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040
\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122
\157\157\164\040\107\103\040\103\101\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\114\351\120\300\306\017\162\030\274\330\361\272\263\211\342
\171\112\243\026\247\153\124\044\333\121\377\352\364\011\044\303
\013\042\237\313\152\047\202\201\015\322\300\257\061\344\164\202
\156\312\045\331\214\165\235\361\333\320\232\242\113\041\176\026
\247\143\220\322\071\324\261\207\170\137\030\226\017\120\033\065
\067\017\152\306\334\331\023\115\244\216\220\067\346\275\133\061
\221\243\124\060\122\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\110\207\024\254\343\303\236\220\140\072\327\312\211\356\323
\255\214\264\120\146\060\020\006\011\053\006\001\004\001\202\067
\025\001\004\003\002\001\000\060\012\006\010\052\206\110\316\075
\004\003\003\003\150\000\060\145\002\060\046\307\151\133\334\325
\347\262\347\310\014\214\214\303\335\171\214\033\143\325\311\122
\224\116\115\202\112\163\036\262\200\204\251\045\300\114\132\155
\111\051\140\170\023\342\176\110\353\144\002\061\000\333\064\040
\062\010\377\232\111\002\266\210\336\024\257\135\154\231\161\215
\032\077\213\327\340\242\066\206\034\007\202\072\166\123\375\302
\242\355\357\173\260\200\117\130\017\113\123\071\275


```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "OISTE WISEKey Global Root GC CA"
# Issuer: CN=OISTE WISEKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH
# Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea
# Subject: CN=OISTE WISEKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISEKey,C=CH
# Not Valid Before: Tue May 09
09:48:34 2017
# Not Valid After : Fri May 09 09:58:33 2042
# Fingerprint (SHA-256):
85:60:F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D
# Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISEKey Global Root GC CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\340\021\204\136\064\336\276\210\201\271\234\366\026\046\321\226
\037\303\271\061
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\251\326\271\055\057\223\144\370\245\151\312\221\351\150\007\043
END
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055
\072\352
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```
#
```

```
# Certificate "UCA Global G2 Root"
#
# Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN
# Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef
# Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN
# Not Valid Before: Fri Mar 11 00:00:00 2016
# Not Valid After : Mon Dec 31 00:00:00 2040
# Fingerprint (SHA-256):
9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C
# Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global G2 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003
\220\357
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\106\060\202\003\056\240\003\002\001\002\002\020\135
\337\261\332\132\243\355\135\276\132\145\040\145\003\220\357\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\075
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060
\017\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164
\061\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107
\154\157\142\141\154\040\107\062\040\122\157\157\164\060\036\027
\015\061\066\060\063\061\061\060\060\060\060\060\060\132\027\015
\064\060\061\062\063\061\060\060\060\060\060\060\132\060\075\061
\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060\017
\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164\061
\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107\154
\157\142\141\154\040\107\062\040\122\157\157\164\060\202\002\042
```

\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\305\346\053
\157\174\357\046\005\047\243\201\044\332\157\313\001\371\231\232
\251\062\302\042\207\141\101\221\073\313\303\150\033\006\305\114
\251\053\301\147\027\042\035\053\355\371\051\211\223\242\170\275
\222\153\240\243\015\242\176\312\223\263\246\321\214\065\325\165
\371\027\366\317\105\305\345\172\354\167\223\240\217\043\256\016
\032\003\177\276\324\320\355\056\173\253\106\043\133\377\054\346
\124\172\224\300\052\025\360\311\215\260\172\073\044\341\327\150
\342\061\074\006\063\106\266\124\021\246\245\057\042\124\052\130
\015\001\002\361\372\025\121\147\154\300\372\327\266\033\177\321
\126\210\057\032\072\215\073\273\202\021\340\107\000\320\122\207
\253\373\206\176\017\044\153\100\235\064\147\274\215\307\055\206
\157\171\076\216\251\074\027\113\177\260\231\343\260\161\140\334
\013\365\144\303\316\103\274\155\161\271\322\336\047\133\212\350
\330\306\256\341\131\175\317\050\055\065\270\225\126\032\361\262
\130\113\267\022\067\310\174\263\355\113\200\341\215\372\062\043
\266\157\267\110\225\010\261\104\116\205\214\072\002\124\040\057
\337\277\127\117\073\072\220\041\327\301\046\065\124\040\354\307
\077\107\354\357\132\277\113\172\301\255\073\027\120\134\142\330
\017\113\112\334\053\372\156\274\163\222\315\354\307\120\350\101
\226\327\251\176\155\330\351\035\217\212\265\271\130\222\272\112
\222\053\014\126\375\200\353\010\360\136\051\156\033\034\014\257
\217\223\211\255\333\275\243\236\041\312\211\031\354\337\265\303
\032\353\026\376\170\066\114\326\156\320\076\027\034\220\027\153
\046\272\373\172\057\277\021\034\030\016\055\163\003\217\240\345
\065\240\132\342\114\165\035\161\341\071\070\123\170\100\314\203
\223\327\012\236\235\133\217\212\344\345\340\110\344\110\262\107
\315\116\052\165\052\173\362\042\366\311\276\011\221\226\127\172
\210\210\254\356\160\254\371\334\051\343\014\034\073\022\116\104
\326\247\116\260\046\310\363\331\032\227\221\150\352\357\215\106
\006\322\126\105\130\232\074\014\017\203\270\005\045\303\071\317
\073\244\064\211\267\171\022\057\107\305\347\251\227\151\374\246
\167\147\265\337\173\361\172\145\025\344\141\126\145\002\003\001
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\201\304\214\314\365\344\060\377\245\014\010\137\214\025
\147\041\164\001\337\337\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\002\001\000\023\145\042\365\216\053
\255\104\344\313\377\271\150\346\303\200\110\075\004\173\372\043
\057\172\355\066\332\262\316\155\366\346\236\345\137\130\217\313
\067\062\241\310\145\266\256\070\075\065\033\076\274\073\266\004
\320\274\371\111\365\233\367\205\305\066\266\313\274\370\310\071
\325\344\137\007\275\025\124\227\164\312\312\355\117\272\272\144
\166\237\201\270\204\105\111\114\215\157\242\353\261\314\321\303
\224\332\104\302\346\342\352\030\350\242\037\047\005\272\327\345
\326\251\315\335\357\166\230\215\000\016\315\033\372\003\267\216

```
\200\130\016\047\077\122\373\224\242\312\136\145\311\326\204\332
\271\065\161\363\046\300\117\167\346\201\047\322\167\073\232\024
\157\171\364\366\320\341\323\224\272\320\127\121\275\047\005\015
\301\375\310\022\060\356\157\215\021\053\010\235\324\324\277\200
\105\024\232\210\104\332\060\352\264\247\343\356\357\133\202\325
\076\326\255\170\222\333\134\074\363\330\255\372\270\153\177\304
\066\050\266\002\025\212\124\054\234\260\027\163\216\320\067\243
\024\074\230\225\000\014\051\005\133\236\111\111\261\137\307\343
\313\317\047\145\216\065\027\267\127\310\060\331\101\133\271\024
\266\350\302\017\224\061\247\224\230\314\152\353\265\341\047\365
\020\250\001\350\216\022\142\350\210\314\265\177\106\227\300\233
\020\146\070\032\066\106\137\042\150\075\337\311\306\023\047\253
\123\006\254\242\074\206\006\145\157\261\176\261\051\104\232\243
\272\111\151\050\151\217\327\345\137\255\004\206\144\157\032\240
\014\305\010\142\316\200\243\320\363\354\150\336\276\063\307\027
\133\177\200\304\114\114\261\246\204\212\303\073\270\011\315\024
\201\272\030\343\124\127\066\376\333\057\174\107\241\072\063\310
\371\130\073\104\117\261\312\002\211\004\226\050\150\305\113\270
\046\211\273\326\063\057\120\325\376\232\211\272\030\062\222\124
\306\133\340\235\371\136\345\015\042\233\366\332\342\310\041\262
\142\041\252\206\100\262\056\144\323\137\310\343\176\021\147\105
\037\005\376\343\242\357\263\250\263\363\175\217\370\014\037\042
\037\055\160\264\270\001\064\166\060\000\345\043\170\247\126\327
\120\037\212\373\006\365\302\031\360\320
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "UCA Global G2 Root"

Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN

Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef

Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN

Not Valid Before: Fri Mar 11 00:00:00 2016

Not Valid After : Mon Dec 31 00:00:00 2040

Fingerprint (SHA-256):

9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C

Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "UCA Global G2 Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\050\371\170\026\031\172\377\030\045\030\252\104\376\301\240\316
```

```
\134\266\114\212
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\200\376\360\304\112\360\134\142\062\237\034\272\170\251\120\370
END
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101
\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003
\220\357
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "UCA Extended Validation Root"
#
# Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN
# Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60
# Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN
# Not Valid Before: Fri Mar 13 00:00:00 2015
# Not Valid After : Fri Dec 31 00:00:00 2038
# Fingerprint (SHA-256):
D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24
# Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Extended Validation Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061

```

\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043
\160\140

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\132\060\202\003\102\240\003\002\001\002\002\020\117
\322\053\217\365\144\310\063\236\117\064\130\146\043\160\140\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\107
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060
\017\006\003\125\004\012\014\010\125\156\151\124\162\165\163\164
\061\045\060\043\006\003\125\004\003\014\034\125\103\101\040\105
\170\164\145\156\144\145\144\040\126\141\154\151\144\141\164\151
\157\156\040\122\157\157\164\060\036\027\015\061\065\060\063\061
\063\060\060\060\060\060\060\132\027\015\063\070\061\062\063\061
\060\060\060\060\060\060\132\060\107\061\013\060\011\006\003\125
\004\006\023\002\103\116\061\021\060\017\006\003\125\004\012\014
\010\125\156\151\124\162\165\163\164\061\045\060\043\006\003\125
\004\003\014\034\125\103\101\040\105\170\164\145\156\144\145\144
\040\126\141\154\151\144\141\164\151\157\156\040\122\157\157\164
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\251\011\007\050\023\002\260\231\340\144\252\036\103\026\172
\163\261\221\240\165\076\250\372\343\070\000\172\354\211\152\040
\017\213\305\260\233\063\003\132\206\306\130\206\325\301\205\273
\117\306\234\100\115\312\276\356\151\226\270\255\201\060\232\174
\222\005\353\005\053\232\110\320\270\166\076\226\310\040\273\322
\260\361\217\330\254\105\106\377\252\147\140\264\167\176\152\037
\074\032\122\172\004\075\007\074\205\015\204\320\037\166\012\367
\152\024\337\162\343\064\174\127\116\126\001\076\171\361\252\051
\073\154\372\370\217\155\115\310\065\337\256\353\334\044\356\171
\105\247\205\266\005\210\336\210\135\045\174\227\144\147\011\331
\277\132\025\005\206\363\011\036\354\130\062\063\021\363\167\144
\260\166\037\344\020\065\027\033\362\016\261\154\244\052\243\163
\374\011\037\036\062\031\123\021\347\331\263\054\056\166\056\241
\243\336\176\152\210\011\350\362\007\212\370\262\315\020\347\342
\163\100\223\273\010\321\077\341\374\013\224\263\045\357\174\246
\327\321\257\237\377\226\232\365\221\173\230\013\167\324\176\350
\007\322\142\265\225\071\343\363\361\155\017\016\145\204\212\143
\124\305\200\266\340\236\113\175\107\046\247\001\010\135\321\210
\236\327\303\062\104\372\202\112\012\150\124\177\070\123\003\314
\244\000\063\144\121\131\013\243\202\221\172\136\354\026\302\363
\052\346\142\332\052\333\131\142\020\045\112\052\201\013\107\007
\103\006\160\207\322\372\223\021\051\172\110\115\353\224\307\160

\115\257\147\325\121\261\200\040\001\001\264\172\010\246\220\177
\116\340\357\007\101\207\257\152\245\136\213\373\317\120\262\232
\124\257\303\211\272\130\055\365\060\230\261\066\162\071\176\111
\004\375\051\247\114\171\344\005\127\333\224\271\026\123\215\106
\263\035\225\141\127\126\177\257\360\026\133\141\130\157\066\120
\021\013\330\254\053\225\026\032\016\037\010\315\066\064\145\020
\142\146\325\200\137\024\040\137\055\014\240\170\012\150\326\054
\327\351\157\053\322\112\005\223\374\236\157\153\147\377\210\361
\116\245\151\112\122\067\005\352\306\026\215\322\304\231\321\202
\053\073\272\065\165\367\121\121\130\363\310\007\335\344\264\003
\177\002\003\001\000\001\243\102\060\100\060\035\006\003\125\035
\016\004\026\004\024\331\164\072\344\060\075\015\367\022\334\176
\132\005\237\036\064\232\367\341\024\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\066\215
\227\314\102\025\144\051\067\233\046\054\326\373\256\025\151\054
\153\032\032\367\137\266\371\007\114\131\352\363\311\310\271\256
\314\272\056\172\334\300\365\260\055\300\073\257\237\160\005\021
\152\237\045\117\001\051\160\343\345\014\341\352\132\174\334\111
\273\301\036\052\201\365\026\113\162\221\310\242\061\271\252\332
\374\235\037\363\135\100\002\023\374\116\034\006\312\263\024\220
\124\027\031\022\032\361\037\327\014\151\132\366\161\170\364\224
\175\221\013\216\354\220\124\216\274\157\241\114\253\374\164\144
\375\161\232\370\101\007\241\315\221\344\074\232\340\233\062\071
\163\253\052\325\151\310\170\221\046\061\175\342\307\060\361\374
\024\170\167\022\016\023\364\335\026\224\277\113\147\173\160\123
\205\312\260\273\363\070\115\054\220\071\300\015\302\135\153\351
\342\345\325\210\215\326\054\277\253\033\276\265\050\207\022\027
\164\156\374\175\374\217\320\207\046\260\033\373\271\154\253\342
\236\075\025\301\073\056\147\002\130\221\237\357\370\102\037\054
\267\150\365\165\255\317\265\366\377\021\175\302\360\044\245\255
\323\372\240\074\251\372\135\334\245\240\357\104\244\276\326\350
\345\344\023\226\027\173\006\076\062\355\307\267\102\274\166\243
\330\145\070\053\070\065\121\041\016\016\157\056\064\023\100\341
\053\147\014\155\112\101\060\030\043\132\062\125\231\311\027\340
\074\336\366\354\171\255\053\130\031\242\255\054\042\032\225\216
\276\226\220\135\102\127\304\371\024\003\065\053\034\055\121\127
\010\247\072\336\077\344\310\264\003\163\302\301\046\200\273\013
\102\037\255\015\257\046\162\332\314\276\263\243\203\130\015\202
\305\037\106\121\343\234\030\314\215\233\215\354\111\353\165\120
\325\214\050\131\312\164\064\332\214\013\041\253\036\352\033\345
\307\375\025\076\300\027\252\373\043\156\046\106\313\372\371\261
\162\153\151\317\042\204\013\142\017\254\331\031\000\224\242\166
\074\324\055\232\355\004\236\055\006\142\020\067\122\034\205\162
\033\047\345\314\306\061\354\067\354\143\131\233\013\035\166\314
\176\062\232\210\225\010\066\122\273\336\166\137\166\111\111\255
\177\275\145\040\262\311\301\053\166\030\166\237\126\261

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "UCA Extended Validation Root"
# Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN
# Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60
# Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN
# Not Valid Before: Fri Mar 13 00:00:00 2015
# Not Valid After : Fri Dec 31 00:00:00 2038
# Fingerprint (SHA-256):
D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24
# Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "UCA Extended Validation Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\243\241\260\157\044\141\043\112\343\066\245\302\067\374\246\377
\335\360\327\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\363\137\103\306\064\233\332\277\214\176\005\123\255\226\342
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043
\160\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certigna Root CA"
#
# Issuer: CN=Certigna Root CA,OU=0002

```


48146308100036,O=Dhimyotis,C=FR
Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1
Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
Not Valid Before: Tue Oct 01 08:32:27 2013
Not Valid After : Sat Oct 01 08:32:27 2033
Fingerprint (SHA-256):
D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68
Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304
\343\246\341
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\133\060\202\004\103\240\003\002\001\002\002\021\000
\312\351\033\211\361\125\003\015\243\346\101\155\304\343\246\341
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022
\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157\164
\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060\060
\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063\066
\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164\151
\147\156\141\040\122\157\157\164\040\103\101\060\036\027\015\061
\063\061\060\060\061\060\070\063\062\062\067\132\027\015\063\063
\061\060\060\061\060\070\063\062\062\067\132\060\132\061\013\060

\011\006\003\125\004\006\023\002\106\122\061\022\060\020\006\003
\125\004\012\014\011\104\150\151\155\171\157\164\151\163\061\034
\060\032\006\003\125\004\013\014\023\060\060\060\062\040\064\070
\061\064\066\063\060\070\061\060\060\060\063\066\061\031\060\027
\006\003\125\004\003\014\020\103\145\162\164\151\147\156\141\040
\122\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\315\030\071\145\032\131\261\352
\144\026\016\214\224\044\225\174\203\323\305\071\046\334\014\357
\026\127\215\327\330\254\243\102\177\202\312\355\315\133\333\016
\267\055\355\105\010\027\262\331\263\313\326\027\122\162\050\333
\216\116\236\212\266\013\371\236\204\232\115\166\336\042\051\134
\322\263\322\006\076\060\071\251\164\243\222\126\034\241\157\114
\012\040\155\237\043\172\264\306\332\054\344\035\054\334\263\050
\320\023\362\114\116\002\111\241\124\100\236\346\345\005\240\055
\204\310\377\230\154\320\353\212\032\204\010\036\267\150\043\356
\043\325\160\316\155\121\151\020\356\241\172\302\321\042\061\302
\202\205\322\362\125\166\120\174\045\172\311\204\134\013\254\335
\102\116\053\347\202\242\044\211\313\220\262\320\356\043\272\146
\114\273\142\244\371\123\132\144\173\174\230\372\243\110\236\017
\225\256\247\030\364\152\354\056\003\105\257\360\164\370\052\315
\172\135\321\276\104\046\062\051\361\361\365\154\314\176\002\041
\013\237\157\244\077\276\235\123\342\317\175\251\054\174\130\032
\227\341\075\067\067\030\146\050\322\100\305\121\212\214\303\055
\316\123\210\044\130\144\060\026\305\252\340\326\012\246\100\337
\170\366\365\004\174\151\023\204\274\321\321\247\006\317\001\367
\150\300\250\127\273\072\141\255\004\214\223\343\255\374\360\333
\104\155\131\334\111\131\256\254\232\231\066\060\101\173\166\063
\042\207\243\302\222\206\156\371\160\356\256\207\207\225\033\304
\172\275\061\363\324\322\345\231\377\276\110\354\165\365\170\026
\035\246\160\301\177\074\033\241\222\373\317\310\074\326\305\223
\012\217\365\125\072\166\225\316\131\230\212\011\225\167\062\232
\203\272\054\004\072\227\275\324\057\276\327\154\233\242\312\175
\155\046\311\125\325\317\303\171\122\010\011\231\007\044\055\144
\045\153\246\041\151\233\152\335\164\115\153\227\172\101\275\253
\027\371\220\027\110\217\066\371\055\325\305\333\356\252\205\105
\101\372\315\072\105\261\150\346\066\114\233\220\127\354\043\271
\207\010\302\304\011\361\227\206\052\050\115\342\164\300\332\304
\214\333\337\342\241\027\131\316\044\131\164\061\332\177\375\060
\155\331\334\341\152\341\374\137\002\003\001\000\001\243\202\001
\032\060\202\001\026\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004
\024\030\207\126\340\156\167\356\044\065\074\116\163\232\037\326
\341\342\171\176\053\060\037\006\003\125\035\043\004\030\060\026
\200\024\030\207\126\340\156\167\356\044\065\074\116\163\232\037
\326\341\342\171\176\053\060\104\006\003\125\035\040\004\075\060
\073\060\071\006\004\125\035\040\000\060\061\060\057\006\010\053

\006\001\005\005\007\002\001\026\043\150\164\164\160\163\072\057
\057\167\167\167\167\056\143\145\162\164\151\147\156\141\056\146
\162\057\141\165\164\157\162\151\164\145\163\057\060\155\006\003
\125\035\037\004\146\060\144\060\057\240\055\240\053\206\051\150
\164\164\160\072\057\057\143\162\154\056\143\145\162\164\151\147
\156\141\056\146\162\057\143\145\162\164\151\147\156\141\162\157
\157\164\143\141\056\143\162\154\060\061\240\057\240\055\206\053
\150\164\164\160\072\057\057\143\162\154\056\144\150\151\155\171
\157\164\151\163\056\143\157\155\057\143\145\162\164\151\147\156
\141\162\157\157\164\143\141\056\143\162\154\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\224
\270\236\117\360\343\225\010\042\347\315\150\101\367\034\125\325
\174\000\342\055\072\211\135\150\070\057\121\042\013\112\215\313
\351\273\135\076\273\134\075\261\050\376\344\123\125\023\317\241
\220\033\002\035\137\146\106\011\063\050\341\015\044\227\160\323
\020\037\352\144\127\226\273\135\332\347\304\214\117\114\144\106
\035\134\207\343\131\336\102\321\233\250\176\246\211\335\217\034
\311\060\202\355\073\234\315\300\351\031\340\152\330\002\165\067
\253\367\064\050\050\221\362\004\012\117\065\343\140\046\001\372
\320\021\214\371\021\152\356\257\075\303\120\323\217\137\063\171
\074\206\250\163\105\220\214\040\266\162\163\027\043\276\007\145
\345\170\222\015\272\001\300\353\214\034\146\277\254\206\167\001
\224\015\234\346\351\071\215\037\246\121\214\231\014\071\167\341
\264\233\372\034\147\127\157\152\152\216\251\053\114\127\171\172
\127\042\317\315\137\143\106\215\134\131\072\206\370\062\107\142
\243\147\015\030\221\334\373\246\153\365\110\141\163\043\131\216
\002\247\274\104\352\364\111\235\361\124\130\371\140\257\332\030
\244\057\050\105\334\172\240\210\206\135\363\073\347\377\051\065
\200\374\144\103\224\346\343\034\157\276\255\016\052\143\231\053
\311\176\205\366\161\350\006\003\225\376\336\217\110\034\132\324
\222\350\053\356\347\061\333\272\004\152\207\230\347\305\137\357
\175\247\042\367\001\330\115\371\211\320\016\232\005\131\244\236
\230\331\157\053\312\160\276\144\302\125\243\364\351\257\303\222
\051\334\210\026\044\231\074\215\046\230\266\133\267\314\316\267
\067\007\375\046\331\230\205\044\377\131\043\003\232\355\235\235
\250\344\136\070\316\327\122\015\157\322\077\155\261\005\153\111
\316\212\221\106\163\364\366\057\360\250\163\167\016\145\254\241
\215\146\122\151\176\113\150\014\307\036\067\047\203\245\214\307
\002\344\024\315\111\001\260\163\263\375\306\220\072\157\322\154
\355\073\356\354\221\276\242\103\135\213\000\112\146\045\104\160
\336\100\017\370\174\025\367\242\316\074\327\136\023\214\201\027
\030\027\321\275\361\167\020\072\324\145\071\301\047\254\127\054
\045\124\377\242\332\117\212\141\071\136\256\075\112\214\275

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Trust for "Certigna Root CA"
# Issuer: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
# Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1
# Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
# Not Valid Before: Tue Oct 01 08:32:27 2013
# Not Valid After : Sat Oct 01 08:32:27 2033
# Fingerprint (SHA-256):
D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68
# Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\055\015\122\024\377\236\255\231\044\001\164\040\107\156\154\205
\047\047\365\103
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\016\134\060\142\047\353\133\274\327\256\142\272\351\325\337\167
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304
\343\246\341
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "emSign Root CA - G1"
#
# Issuer: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8
# Subject: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
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# Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67
# Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\012\061\365\344\142\014\154\130\355\326\330
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\224\060\202\002\174\240\003\002\001\002\002\012\061
\365\344\142\014\154\130\355\326\330\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\060\147\061\013\060\011\006\003
\125\004\006\023\002\111\116\061\023\060\021\006\003\125\004\013
\023\012\145\155\123\151\147\156\040\120\113\111\061\045\060\043
\006\003\125\004\012\023\034\145\115\165\144\150\162\141\040\124
\145\143\150\156\157\154\157\147\151\145\163\040\114\151\155\151
\164\145\144\061\034\060\032\006\003\125\004\003\023\023\145\155
\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040\107
\061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060\060
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060
\132\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147
\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034
```

\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157
\147\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032
\006\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157
\157\164\040\103\101\040\055\040\107\061\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\223\113\273\351\146
\212\356\235\133\325\064\223\320\033\036\303\347\236\270\144\063
\177\143\170\150\264\315\056\161\165\327\233\040\306\115\051\274
\266\150\140\212\367\041\232\126\065\132\363\166\275\330\315\232
\377\223\126\113\245\131\006\241\223\064\051\335\026\064\165\116
\362\201\264\307\226\116\255\031\025\122\112\376\074\160\165\160
\315\257\053\253\025\232\063\074\252\263\213\252\315\103\375\365
\352\160\377\355\317\021\073\224\316\116\062\026\323\043\100\052
\167\263\257\074\001\054\154\355\231\054\213\331\116\151\230\262
\367\217\101\260\062\170\141\326\015\137\303\372\242\100\222\035
\134\027\346\160\076\065\347\242\267\302\142\342\253\244\070\114
\265\071\065\157\352\003\151\372\072\124\150\205\155\326\362\057
\103\125\036\221\015\016\330\325\152\244\226\321\023\074\054\170
\120\350\072\222\322\027\126\345\065\032\100\034\076\215\054\355
\071\337\102\340\203\101\164\337\243\315\302\206\140\110\150\343
\151\013\124\000\213\344\166\151\041\015\171\116\064\010\136\024
\302\314\261\267\255\327\174\160\212\307\205\002\003\001\000\001
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\373
\357\015\206\236\260\343\335\251\271\361\041\027\177\076\374\360
\167\053\032\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\001\001\000\131\377\362\214\365\207\175\161
\075\243\237\033\133\321\332\370\323\234\153\066\275\233\251\141
\353\336\026\054\164\075\236\346\165\332\327\272\247\274\102\027
\347\075\221\353\345\175\335\076\234\361\317\222\254\154\110\314
\302\042\077\151\073\305\266\025\057\243\065\306\150\052\034\127
\257\071\357\215\320\065\303\030\014\173\000\126\034\315\213\031
\164\336\276\017\022\340\320\252\241\077\002\064\261\160\316\235
\030\326\010\003\011\106\356\140\340\176\266\304\111\004\121\175
\160\140\274\252\262\377\171\162\172\246\035\075\137\052\370\312
\342\375\071\267\107\271\353\176\337\004\043\257\372\234\006\007
\351\373\143\223\200\100\265\306\154\012\061\050\316\014\237\317
\263\043\065\200\101\215\154\304\067\173\201\057\200\241\100\102
\205\351\331\070\215\350\241\123\315\001\277\151\350\132\006\362
\105\013\220\372\256\341\277\235\362\256\127\074\245\256\262\126
\364\213\145\100\351\375\061\201\054\364\071\011\330\356\153\247
\264\246\035\025\245\230\367\001\201\330\205\175\363\121\134\161
\210\336\272\314\037\200\176\112

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "emSign Root CA - G1"

Issuer: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8

Subject: CN=emSign Root CA - G1,O=eMudhra Technologies

Limited,OU=emSign PKI,C=IN

Not Valid Before: Sun Feb 18 18:30:00 2018

Not Valid After : Wed Feb 18 18:30:00 2043

Fingerprint (SHA-256):

40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67

Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "emSign Root CA - G1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\212\307\255\217\163\254\116\301\265\165\115\245\100\364\374\317

\174\265\216\214

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\234\102\204\127\335\313\013\247\056\225\255\266\363\332\274\254

END

CKA_ISSUER MULTILINE_OCTAL

\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061

\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156

\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145

\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147

\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006

\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157

\164\040\103\101\040\055\040\107\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\012\061\365\344\142\014\154\130\355\326\330

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "emSign ECC Root CA - G3"

#

Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84

Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

```
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B
# Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\012\074\366\007\251\150\160\016\332\213\204
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\116\060\202\001\323\240\003\002\001\002\002\012\074
\366\007\251\150\160\016\332\213\204\060\012\006\010\052\206\110
\316\075\004\003\003\060\153\061\013\060\011\006\003\125\004\006
\023\002\111\116\061\023\060\021\006\003\125\004\013\023\012\145
\155\123\151\147\156\040\120\113\111\061\045\060\043\006\003\125
\004\012\023\034\145\115\165\144\150\162\141\040\124\145\143\150
\156\157\154\157\147\151\145\163\040\114\151\155\151\164\145\144
\061\040\060\036\006\003\125\004\003\023\027\145\155\123\151\147
\156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040
\107\063\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060
\060\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060
\060\132\060\153\061\013\060\011\006\003\125\004\006\023\002\111
```


\116\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151
\147\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023
\034\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154
\157\147\151\145\163\040\114\151\155\151\164\145\144\061\040\060
\036\006\003\125\004\003\023\027\145\155\123\151\147\156\040\105
\103\103\040\122\157\157\164\040\103\101\040\055\040\107\063\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\043\245\014\270\055\022\365\050\363
\261\262\335\342\002\022\200\236\071\137\111\115\237\311\045\064
\131\164\354\273\006\034\347\300\162\257\350\256\057\341\101\124
\207\024\250\112\262\350\174\202\346\133\152\265\334\263\165\316
\213\006\320\206\043\277\106\325\216\017\077\004\364\327\034\222
\176\366\245\143\302\365\137\216\056\117\241\030\031\002\053\062
\012\202\144\175\026\223\321\243\102\060\100\060\035\006\003\125
\035\016\004\026\004\024\174\135\002\204\023\324\314\212\233\201
\316\027\034\056\051\036\234\110\143\102\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\012\006\010\052
\206\110\316\075\004\003\003\003\151\000\060\146\002\061\000\276
\363\141\317\002\020\035\144\225\007\270\030\156\210\205\005\057
\203\010\027\220\312\037\212\114\350\015\033\172\261\255\325\201
\011\107\357\073\254\010\004\174\134\231\261\355\107\007\322\002
\061\000\235\272\125\374\251\112\350\355\355\346\166\001\102\173
\310\370\140\331\215\121\213\125\073\373\214\173\353\145\011\303
\370\226\315\107\250\202\362\026\125\167\044\176\022\020\225\004
\054\243

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "emSign ECC Root CA - G3"

Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign

PKI,C=IN

Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84

Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

Not Valid Before: Sun Feb 18 18:30:00 2018

Not Valid After : Wed Feb 18 18:30:00 2043

Fingerprint (SHA-256):

86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B

Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "emSign ECC Root CA - G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\060\103\372\117\362\127\334\240\303\200\356\056\130\352\170\262

\077\346\273\301

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\316\013\162\321\237\210\216\320\120\003\350\343\270\213\147\100

END

CKA_ISSUER MULTILINE_OCTAL

\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061

\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156

\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145

\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147

\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006

\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103

\040\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\012\074\366\007\251\150\160\016\332\213\204

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "emSign Root CA - C1"

#

Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2

Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

Not Valid Before: Sun Feb 18 18:30:00 2018

Not Valid After : Wed Feb 18 18:30:00 2043

Fingerprint (SHA-256):

12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F

#

Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "emSign Root CA - C1"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156

\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145

\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003

\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164

\040\103\101\040\055\040\103\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\013\000\256\317\000\272\304\317\062\370\103\262

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\163\060\202\002\133\240\003\002\001\002\002\013\000
\256\317\000\272\304\317\062\370\103\262\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\060\126\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125\004
\013\023\012\145\155\123\151\147\156\040\120\113\111\061\024\060
\022\006\003\125\004\012\023\013\145\115\165\144\150\162\141\040
\111\156\143\061\034\060\032\006\003\125\004\003\023\023\145\155
\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040\103
\061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060
\132\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147
\156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013
\145\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\103\061\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\317\353\251\271\361\231
\005\314\330\050\041\112\363\163\064\121\204\126\020\365\240\117
\054\022\343\372\023\232\047\320\317\371\171\032\164\137\035\171
\071\374\133\370\160\216\340\222\122\367\344\045\371\124\203\331
\035\323\310\132\205\077\136\307\266\007\356\076\300\316\232\257
\254\126\102\052\071\045\160\326\277\265\173\066\255\254\366\163
\334\315\327\035\212\203\245\373\053\220\025\067\153\034\046\107
\334\073\051\126\223\152\263\301\152\072\235\075\365\301\227\070
\130\005\213\034\021\343\344\264\270\135\205\035\203\376\170\137
\013\105\150\030\110\245\106\163\064\073\376\017\310\166\273\307
\030\363\005\321\206\363\205\355\347\271\331\062\255\125\210\316
\246\266\221\260\117\254\176\025\043\226\366\077\360\040\064\026
\336\012\306\304\004\105\171\177\247\375\276\322\251\245\257\234
\305\043\052\367\074\041\154\275\257\217\116\305\072\262\363\064
\022\374\337\200\032\111\244\324\251\225\367\236\211\136\242\211

```
\254\224\313\250\150\233\257\212\145\047\315\211\356\335\214\265
\153\051\160\103\240\151\013\344\271\017\002\003\001\000\001\243
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\376\241
\340\160\036\052\003\071\122\132\102\276\134\221\205\172\030\252
\115\265\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\302\112\126\372\025\041\173\050\242
\351\345\035\373\370\055\304\071\226\101\114\073\047\054\304\154
\030\025\200\306\254\257\107\131\057\046\013\343\066\260\357\073
\376\103\227\111\062\231\022\025\133\337\021\051\377\253\123\370
\273\301\170\017\254\234\123\257\127\275\150\214\075\151\063\360
\243\240\043\143\073\144\147\042\104\255\325\161\313\126\052\170
\222\243\117\022\061\066\066\342\336\376\000\304\243\140\017\047
\255\240\260\212\265\066\172\122\241\275\047\364\040\047\142\350
\115\224\044\023\344\012\004\351\074\253\056\310\103\011\112\306
\141\004\345\111\064\176\323\304\310\365\017\300\252\351\272\124
\136\363\143\053\117\117\120\324\376\271\173\231\214\075\300\056
\274\002\053\323\304\100\344\212\007\061\036\233\316\046\231\023
\373\021\352\232\042\014\021\031\307\136\033\201\120\060\310\226
\022\156\347\313\101\177\221\073\242\107\267\124\200\033\334\000
\314\232\220\352\303\303\120\006\142\014\060\300\025\110\247\250
\131\174\341\256\042\242\342\012\172\017\372\142\253\122\114\341
\361\337\312\276\203\015\102
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Trust for "emSign Root CA - C1"

Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2

Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

Not Valid Before: Sun Feb 18 18:30:00 2018

Not Valid After : Wed Feb 18 18:30:00 2043

Fingerprint (SHA-256):

12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F

Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "emSign Root CA - C1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\347\056\361\337\374\262\011\050\317\135\324\325\147\067\261\121
```

```
\313\206\117\001
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\330\343\135\001\041\372\170\132\260\337\272\322\356\052\137\150
END
CKA_ISSUER MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\000\256\317\000\272\304\317\062\370\103\262
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "emSign ECC Root CA - C3"
#
# Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8
# Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
#
Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - C3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_ID UTF8 "0"

```

CKA_ISSUER MULTILINE_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\012\173\161\266\202\126\270\022\174\234\250

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\053\060\202\001\261\240\003\002\001\002\002\012\173
\161\266\202\126\270\022\174\234\250\060\012\006\010\052\206\110
\316\075\004\003\003\060\132\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\023\060\021\006\003\125\004\013\023\012\145
\155\123\151\147\156\040\120\113\111\061\024\060\022\006\003\125
\004\012\023\013\145\115\165\144\150\162\141\040\111\156\143\061
\040\060\036\006\003\125\004\003\023\027\145\155\123\151\147\156
\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040\103
\063\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060\060
\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060
\132\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147
\156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013
\145\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\103\063\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\375\245\141\256\173\046\020\035\351\267\042
\060\256\006\364\201\263\261\102\161\225\071\274\323\122\343\257
\257\371\362\227\065\222\066\106\016\207\225\215\271\071\132\351
\273\337\320\376\310\007\101\074\273\125\157\203\243\152\373\142
\260\201\211\002\160\175\110\305\112\343\351\042\124\042\115\223
\273\102\014\257\167\234\043\246\175\327\141\021\316\145\307\370
\177\376\365\362\251\243\102\060\100\060\035\006\003\125\035\016
\004\026\004\024\373\132\110\320\200\040\100\362\250\351\000\007
\151\031\167\247\346\303\364\317\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\061\000\264\330\057
\002\211\375\266\114\142\272\103\116\023\204\162\265\256\335\034
\336\326\265\334\126\217\130\100\132\055\336\040\114\042\203\312
\223\250\176\356\022\100\307\326\207\117\370\337\205\002\060\034
\024\144\344\174\226\203\021\234\260\321\132\141\113\246\017\111
\323\000\374\241\374\344\245\377\177\255\327\060\320\307\167\177
\276\201\007\125\060\120\040\024\365\127\070\012\250\061\121

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "emSign ECC Root CA - C3"
# Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8
# Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Not Valid Before: Sun Feb 18 18:30:00 2018
#
Not Valid After : Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
# Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - C3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\266\257\103\302\233\201\123\175\366\357\153\303\037\037\140\025
\014\356\110\146
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\076\123\263\243\201\356\327\020\370\323\260\035\027\222\365\325
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003
\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040
\122\157\157\164\040\103\101\040\055\040\103\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\012\173\161\266\202\126\270\022\174\234\250
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Hongkong Post Root CA 3"
#

```

```
# Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
# Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4
# Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
# Not Valid Before: Sat Jun 03 02:29:46 2017
# Not Valid After : Tue Jun 03 02:29:46 2042
# Fingerprint (SHA-256):
5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6
# Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306
\256\043\270\034\132\244
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\317\060\202\003\267\240\003\002\001\002\002\024\010
\026\137\212\114\245\354\000\311\223\100\337\304\306\256\043\270
\034\132\244\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\157\061\013\060\011\006\003\125\004\006\023\002\110
\113\061\022\060\020\006\003\125\004\010\023\011\110\157\156\147
\040\113\157\156\147\061\022\060\020\006\003\125\004\007\023\011
```


\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003\125
\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157\163
\164\061\040\060\036\006\003\125\004\003\023\027\110\157\156\147
\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103
\101\040\063\060\036\027\015\061\067\060\066\060\063\060\062\062
\071\064\066\132\027\015\064\062\060\066\060\063\060\062\062\071
\064\066\132\060\157\061\013\060\011\006\003\125\004\006\023\002
\110\113\061\022\060\020\006\003\125\004\010\023\011\110\157\156
\147\040\113\157\156\147\061\022\060\020\006\003\125\004\007\023
\011\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003
\125\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157
\163\164\061\040\060\036\006\003\125\004\003\023\027\110\157\156
\147\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040
\103\101\040\063\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\263\210\327\352\316\017\040\116\276\346\326
\003\155\356\131\374\302\127\337\051\150\241\203\016\076\150\307
\150\130\234\034\140\113\211\103\014\271\324\025\262\356\301\116
\165\351\265\247\357\345\351\065\231\344\314\034\347\113\137\215
\063\060\040\063\123\331\246\273\325\076\023\216\351\037\207\111
\255\120\055\120\312\030\276\001\130\242\023\160\226\273\211\210
\126\200\134\370\275\054\074\341\114\127\210\273\323\271\225\357
\313\307\366\332\061\164\050\246\346\124\211\365\101\061\312\345
\046\032\315\202\340\160\332\073\051\273\325\003\365\231\272\125
\365\144\321\140\016\263\211\111\270\212\057\005\322\204\105\050
\174\217\150\120\022\170\374\013\265\123\313\302\230\034\204\243
\236\260\276\043\244\332\334\310\053\036\332\156\105\036\211\230
\332\371\000\056\006\351\014\073\160\325\120\045\210\231\313\315
\163\140\367\325\377\065\147\305\241\274\136\253\315\112\270\105
\353\310\150\036\015\015\024\106\022\343\322\144\142\212\102\230
\274\264\306\010\010\370\375\250\114\144\234\166\001\275\057\251
\154\063\017\330\077\050\270\074\151\001\102\206\176\151\301\311
\006\312\345\172\106\145\351\302\326\120\101\056\077\267\344\355
\154\327\277\046\001\021\242\026\051\112\153\064\006\220\354\023
\322\266\373\152\166\322\074\355\360\326\055\335\341\025\354\243
\233\057\054\311\076\053\344\151\073\377\162\045\261\066\206\133
\307\177\153\213\125\033\112\305\040\141\075\256\313\120\341\010
\072\276\260\217\143\101\123\060\010\131\074\230\035\167\272\143
\221\172\312\020\120\140\277\360\327\274\225\207\217\227\305\376
\227\152\001\224\243\174\133\205\035\052\071\072\320\124\241\321
\071\161\235\375\041\371\265\173\360\342\340\002\217\156\226\044
\045\054\240\036\054\250\304\211\247\357\355\231\006\057\266\012
\114\117\333\242\314\067\032\257\107\205\055\212\137\304\064\064
\114\000\375\030\223\147\023\321\067\346\110\264\213\006\305\127
\173\031\206\012\171\313\000\311\122\257\102\377\067\217\341\243
\036\172\075\120\253\143\006\347\025\265\077\266\105\067\224\067
\261\176\362\110\303\177\305\165\376\227\215\105\217\032\247\032
\162\050\032\100\017\002\003\001\000\001\243\143\060\141\060\017

\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\037\006\003\125\035\043\004\030\060\026\200\024\027\235\315\036
\213\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141
\060\035\006\003\125\035\016\004\026\004\024\027\235\315\036\213
\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202
\002\001\000\126\325\173\156\346\042\001\322\102\233\030\325\016
\327\146\043\134\343\376\240\307\222\322\351\224\255\113\242\306
\354\022\174\164\325\110\322\131\024\231\300\353\271\321\353\364
\110\060\133\255\247\127\163\231\251\323\345\267\321\056\131\044
\130\334\150\056\056\142\330\152\344\160\013\055\040\120\040\244
\062\225\321\000\230\273\323\375\367\062\362\111\256\306\172\340
\107\276\156\316\313\243\162\072\055\151\135\313\310\350\105\071
\324\372\102\301\021\114\167\135\222\373\152\377\130\104\345\353
\201\236\257\240\231\255\276\251\001\146\313\070\035\074\337\103
\037\364\115\156\264\272\027\106\374\175\375\207\201\171\152\015
\063\017\372\057\370\024\271\200\263\135\115\252\227\341\371\344
\030\305\370\325\070\214\046\074\375\362\050\342\356\132\111\210
\054\337\171\075\216\236\220\074\275\101\112\072\335\133\366\232
\264\316\077\045\060\177\062\175\242\003\224\320\334\172\241\122
\336\156\223\215\030\046\375\125\254\275\217\233\322\317\257\347
\206\054\313\037\011\157\243\157\251\204\324\163\277\115\241\164
\033\116\043\140\362\314\016\252\177\244\234\114\045\250\262\146
\073\070\377\331\224\060\366\162\204\276\150\125\020\017\306\163
\054\026\151\223\007\376\261\105\355\273\242\125\152\260\332\265
\112\002\045\047\205\327\267\267\206\104\026\211\154\200\053\076
\227\251\234\325\176\125\114\306\336\105\020\034\352\351\073\237
\003\123\356\356\172\001\002\026\170\324\350\302\276\106\166\210
\023\077\042\273\110\022\035\122\000\264\002\176\041\032\036\234
\045\364\363\075\136\036\322\034\371\263\055\266\367\067\134\306
\313\041\116\260\367\231\107\030\205\301\053\272\125\256\006\352
\320\007\262\334\253\320\202\226\165\316\322\120\376\231\347\317
\057\237\347\166\321\141\052\373\041\273\061\320\252\237\107\244
\262\042\312\026\072\120\127\304\133\103\147\305\145\142\003\111
\001\353\103\331\330\370\236\255\317\261\143\016\105\364\240\132
\054\233\055\305\246\300\255\250\107\364\047\114\070\015\056\033
\111\073\122\364\350\210\203\053\124\050\324\362\065\122\264\062
\203\142\151\144\014\221\234\237\227\352\164\026\375\037\021\006
\232\233\364

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Hongkong Post Root CA 3"

Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK

```
# Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4
# Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
# Not Valid Before: Sat Jun 03 02:29:46 2017
# Not Valid After : Tue Jun 03 02:29:46 2042
# Fingerprint (SHA-256):
5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6
#
Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hongkong Post Root CA 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\130\242\320\354\040\122\201\133\301\363\370\144\002\044\116\302
\216\002\113\002
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\021\374\237\275\163\060\002\212\375\077\363\130\271\313\040\360
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306
\256\043\270\034\132\244
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Entrust Root Certification Authority - G4"
#
# Issuer: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58
# Subject: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
```

```
# Not Valid Before: Wed May 27 11:11:16 2015
# Not Valid After : Sun Dec 27 11:41:16 2037
# Fingerprint (SHA-256):
DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88
#
Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority - G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\064
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125
\145\255\130
END
```

CKA_VALUE

MULTILINE_OCTAL

\060\202\006\113\060\202\004\063\240\003\002\001\002\002\021\000
\331\265\103\177\257\251\071\017\000\000\000\000\125\145\255\130
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165\163
\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165\163
\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162\155
\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051\040
\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111\156
\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162\151
\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060\060
\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107\064
\060\036\027\015\061\065\060\065\062\067\061\061\061\061\061\066
\132\027\015\063\067\061\062\062\067\061\061\064\061\061\066\132
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\064\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\261\354\054\102\356\342\321\060\377\245\222\107\342\055
\303\272\144\227\155\312\367\015\265\131\301\263\313\250\150\031
\330\257\204\155\060\160\135\176\363\056\322\123\231\341\376\037
\136\331\110\257\135\023\215\333\377\143\063\115\323\000\002\274
\304\370\321\006\010\224\171\130\212\025\336\051\263\375\375\304
\117\350\252\342\240\073\171\315\277\153\103\062\335\331\164\020
\271\367\364\150\324\273\320\207\325\252\113\212\052\157\052\004
\265\262\246\307\240\172\346\110\253\322\321\131\314\326\176\043
\346\227\154\360\102\345\334\121\113\025\101\355\111\112\311\336
\020\227\326\166\301\357\245\265\066\024\227\065\330\170\042\065
\122\357\103\275\333\047\333\141\126\202\064\334\313\210\140\014
\013\132\345\054\001\306\124\257\327\252\301\020\173\322\005\132
\270\100\236\206\247\303\220\206\002\126\122\011\172\234\322\047
\202\123\112\145\122\152\365\074\347\250\362\234\257\213\275\323
\016\324\324\136\156\207\236\152\075\105\035\321\135\033\364\351

\012\254\140\231\373\211\264\377\230\054\317\174\035\351\002\252
\004\232\036\270\334\210\156\045\263\154\146\367\074\220\363\127
\301\263\057\365\155\362\373\312\241\370\051\235\106\213\263\152
\366\346\147\007\276\054\147\012\052\037\132\262\076\127\304\323
\041\041\143\145\122\221\033\261\231\216\171\176\346\353\215\000
\331\132\252\352\163\350\244\202\002\107\226\376\133\216\124\141
\243\353\057\113\060\260\213\043\165\162\174\041\074\310\366\361
\164\324\034\173\243\005\125\356\273\115\073\062\276\232\167\146
\236\254\151\220\042\007\037\141\072\226\276\345\232\117\314\005
\074\050\131\323\301\014\124\250\131\141\275\310\162\114\350\334
\237\207\177\275\234\110\066\136\225\243\016\271\070\044\125\374
\165\146\353\002\343\010\064\051\112\306\343\053\057\063\240\332
\243\206\245\022\227\375\200\053\332\024\102\343\222\275\076\362
\135\136\147\164\056\034\210\107\051\064\137\342\062\250\234\045
\067\214\272\230\000\227\213\111\226\036\375\045\212\254\334\332
\330\135\164\156\146\260\377\104\337\241\030\306\276\110\057\067
\224\170\370\225\112\077\177\023\136\135\131\375\164\206\103\143
\163\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003
\125\035\016\004\026\004\024\237\070\304\126\043\303\071\350\240
\161\154\350\124\114\344\350\072\261\277\147\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\022
\345\102\246\173\213\017\014\344\106\245\266\140\100\207\214\045
\176\255\270\150\056\133\306\100\166\074\003\370\311\131\364\363
\253\142\316\020\215\264\132\144\214\150\300\260\162\103\064\322
\033\013\366\054\123\322\312\220\113\206\146\374\252\203\042\364
\213\032\157\046\110\254\166\167\010\277\305\230\134\364\046\211
\236\173\303\271\144\062\001\177\323\303\335\130\155\354\261\253
\204\125\164\167\204\004\047\122\153\206\114\316\335\271\145\377
\326\306\136\237\232\020\231\113\165\152\376\152\351\227\040\344
\344\166\172\306\320\044\252\220\315\040\220\272\107\144\373\177
\007\263\123\170\265\012\142\362\163\103\316\101\053\201\152\056
\205\026\224\123\324\153\137\162\042\253\121\055\102\325\000\234
\231\277\336\273\224\073\127\375\232\365\206\313\126\073\133\210
\001\345\174\050\113\003\371\111\203\174\262\177\174\343\355\216
\241\177\140\123\216\125\235\120\064\022\017\267\227\173\154\207
\112\104\347\365\155\354\200\067\360\130\031\156\112\150\166\360
\037\222\344\352\265\222\323\141\121\020\013\255\247\331\137\307
\137\334\037\243\134\214\241\176\233\267\236\323\126\157\146\136
\007\226\040\355\013\164\373\146\116\213\021\025\351\201\111\176
\157\260\324\120\177\042\327\137\145\002\015\246\364\205\036\330
\256\006\113\112\247\322\061\146\302\370\316\345\010\246\244\002
\226\104\150\127\304\325\063\317\031\057\024\304\224\034\173\244
\331\360\237\016\261\200\342\321\236\021\144\251\210\021\072\166
\202\345\142\302\200\330\244\203\355\223\357\174\057\220\260\062
\114\226\025\150\110\122\324\231\010\300\044\350\034\343\263\245
\041\016\222\300\220\037\317\040\137\312\073\070\307\267\155\072

```
\363\346\104\270\016\061\153\210\216\160\353\234\027\122\250\101
\224\056\207\266\347\246\022\305\165\337\133\300\012\156\173\244
\344\136\206\371\066\224\337\167\303\351\015\300\071\361\171\273
\106\216\253\103\131\047\267\040\273\043\351\126\100\041\354\061
\075\145\252\103\362\075\337\160\104\341\272\115\046\020\073\230
\237\363\310\216\033\070\126\041\152\121\223\323\221\312\106\332
\211\267\075\123\203\054\010\037\213\217\123\335\377\254\037
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

Trust for "Entrust Root Certification Authority - G4"

Issuer: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58

#

Subject: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

Not Valid Before: Wed May 27 11:11:16 2015

Not Valid After : Sun Dec 27 11:41:16 2037

Fingerprint (SHA-256):

DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88

Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Entrust Root Certification Authority - G4"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\024\210\116\206\046\067\260\046\257\131\142\134\100\167\354\065
\051\272\226\001
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\211\123\361\203\043\267\174\216\005\361\214\161\070\116\037\210
```

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111
\156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060
\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
```

```

\064
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125
\145\255\130
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "Microsoft ECC Root Certificate Authority 2017"
#
# Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec
# Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Not Valid Before: Wed Dec 18 23:06:45 2019
# Not Valid After : Fri Jul 18 23:16:04 2042
# Fingerprint (SHA-256):
35:8D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02
# Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151

```


\164\171\040\062\060\061\067

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\146\362\075\257\207\336\213\261\112\352\014\127\061\001
\302\354

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\131\060\202\001\337\240\003\002\001\002\002\020\146
\362\075\257\207\336\213\261\112\352\014\127\061\001\302\354\060
\012\006\010\052\206\110\316\075\004\003\003\060\145\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\036\060\034\006\003
\125\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103
\157\162\160\157\162\141\164\151\157\156\061\066\060\064\006\003
\125\004\003\023\055\115\151\143\162\157\163\157\146\164\040\105
\103\103\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\067\060\036\027\015\061\071\061\062\061\070\062\063\060\066
\064\065\132\027\015\064\062\060\067\061\070\062\063\061\066\060
\064\132\060\145\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162
\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\066\060\064\006\003\125\004\003\023\055\115\151\143\162
\157\163\157\146\164\040\105\103\103\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\061\067\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\324\274\075\002\102\165\101\023\043\315\200\004\206\002\121
\057\152\250\201\142\013\145\314\366\312\235\036\157\112\146\121
\242\003\331\235\221\372\266\026\261\214\156\336\174\315\333\171
\246\057\316\273\316\161\057\345\245\253\050\354\143\004\146\231
\370\372\362\223\020\005\341\201\050\102\343\306\150\364\346\033
\204\140\112\211\257\355\171\017\073\316\361\366\104\365\001\170
\300\243\124\060\122\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\310\313\231\162\160\122\014\370\346\276\262\004\127\051\052
\317\102\020\355\065\060\020\006\011\053\006\001\004\001\202\067
\025\001\004\003\002\001\000\060\012\006\010\052\206\110\316\075
\004\003\003\003\150\000\060\145\002\060\130\362\115\352\014\371
\137\136\356\140\051\313\072\362\333\326\062\204\031\077\174\325
\057\302\261\314\223\256\120\273\011\062\306\306\355\176\311\066
\224\022\344\150\205\006\242\033\320\057\002\061\000\231\351\026
\264\016\372\126\110\324\244\060\026\221\170\333\124\214\145\001
\212\347\120\146\302\061\267\071\272\270\032\042\007\116\374\153
\124\026\040\377\053\265\347\114\014\115\246\117\163

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "Microsoft ECC Root Certificate Authority 2017"
# Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec
# Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Not Valid Before: Wed Dec 18 23:06:45 2019
# Not Valid After : Fri Jul 18 23:16:04 2042
# Fingerprint (SHA-256):
35:8D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02
#
Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\231\232\144\303\177\364\175\237\253\225\361\107\151\211\024\140
\356\304\303\305
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\335\241\003\346\112\223\020\321\277\360\031\102\313\376\355\147
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\146\362\075\257\207\336\213\261\112\352\014\127\061\001
\302\354
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Microsoft RSA Root Certificate Authority 2017"
#

```

```
# Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Serial Number:1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3
# Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Not Valid Before: Wed Dec 18 22:51:22 2019
# Not Valid After : Fri Jul 18 23:00:23 2042
# Fingerprint (SHA-256):
C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0
# Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177
\105\263
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\250\060\202\003\220\240\003\002\001\002\002\020\036
\323\227\011\137\330\264\263\107\160\036\252\276\177\105\263\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036\060
\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146
\164\040\103\157\162\160\157\162\141\164\151\157\156\061\066\060
\064\006\003\125\004\003\023\055\115\151\143\162\157\163\157\146
\164\040\122\123\101\040\122\157\157\164\040\103\145\162\164\151
```

\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
\040\062\060\061\067\060\036\027\015\061\071\061\062\061\070\062
\062\065\061\062\062\132\027\015\064\062\060\067\061\070\062\063
\060\060\062\063\132\060\145\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\036\060\034\006\003\125\004\012\023\025\115
\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141
\164\151\157\156\061\066\060\064\006\003\125\004\003\023\055\115
\151\143\162\157\163\157\146\164\040\122\123\101\040\122\157\157
\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165
\164\150\157\162\151\164\171\040\062\060\061\067\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\133\276
\224\063\214\051\225\221\026\012\225\275\107\142\301\211\363\231
\066\337\106\220\311\245\355\170\152\157\107\221\150\370\047\147
\120\063\035\241\246\373\340\345\103\243\204\002\127\001\135\234
\110\100\202\123\020\274\277\307\073\150\220\266\202\055\345\364
\145\320\314\155\031\314\225\371\173\254\112\224\255\016\336\113
\103\035\207\007\222\023\220\200\203\144\065\071\004\374\345\351
\154\263\266\037\120\224\070\145\120\134\027\106\271\266\205\265
\034\265\027\350\326\105\235\330\262\046\260\312\304\160\112\256
\140\244\335\263\331\354\374\073\325\127\162\274\077\310\311\262
\336\113\153\370\043\154\003\300\005\275\225\307\315\163\073\146
\200\144\343\032\254\056\371\107\005\362\006\266\233\163\365\170
\063\133\307\241\373\047\052\241\264\232\221\214\221\323\072\202
\076\166\100\264\315\122\141\121\160\050\077\305\305\132\362\311
\214\111\273\024\133\115\310\377\147\115\114\022\226\255\365\376
\170\250\227\207\327\375\136\040\200\334\241\113\042\373\324\211
\255\272\316\107\227\107\125\173\217\105\310\147\050\204\225\034
\150\060\357\357\111\340\065\173\144\347\230\260\224\332\115\205
\073\076\125\304\050\257\127\363\236\023\333\106\047\237\036\242
\136\104\203\244\245\312\325\023\263\113\077\304\343\302\346\206
\141\244\122\060\271\172\040\117\157\017\070\123\313\063\014\023
\053\217\326\232\275\052\310\055\261\034\175\113\121\312\107\321
\110\047\162\135\207\353\325\105\346\110\145\235\257\122\220\272
\133\242\030\145\127\022\237\150\271\324\025\153\224\304\151\042
\230\364\063\340\355\371\121\216\101\120\311\064\117\166\220\254
\374\070\301\330\341\173\271\343\343\224\341\106\151\313\016\012
\120\153\023\272\254\017\067\132\267\022\265\220\201\036\126\256
\127\042\206\331\311\322\321\327\121\343\253\073\306\125\375\036
\016\323\164\012\321\332\252\352\151\270\227\050\217\110\304\007
\370\122\103\072\364\312\125\065\054\260\246\152\300\234\371\362
\201\341\022\152\300\105\331\147\263\316\377\043\242\211\012\124
\324\024\271\052\250\327\354\371\253\315\045\130\062\171\217\220
\133\230\071\304\010\006\301\254\177\016\075\000\245\002\003\001
\000\001\243\124\060\122\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\011\313\131\177\206\262\160\217\032\303\071\343\300\331

\351\277\273\115\262\043\060\020\006\011\053\006\001\004\001\202
\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110\206
\367\015\001\001\014\005\000\003\202\002\001\000\254\257\076\135
\302\021\226\211\216\243\347\222\326\227\025\270\023\242\246\102
\056\002\315\026\005\131\047\312\040\350\272\270\350\032\354\115
\250\227\126\256\145\103\261\217\000\233\122\315\125\315\123\071
\155\142\114\213\015\133\174\056\104\277\203\020\217\363\123\202
\200\303\117\072\307\156\021\077\346\343\026\221\204\373\155\204
\177\064\164\255\211\247\316\271\327\327\237\204\144\222\276\225
\241\255\011\123\063\335\356\012\352\112\121\216\157\125\253\272
\265\224\106\256\214\177\330\242\120\045\145\140\200\106\333\063
\004\256\154\265\230\164\124\045\334\223\344\370\343\125\025\075
\270\155\303\012\244\022\301\151\205\156\337\144\361\123\231\341
\112\165\040\235\225\017\344\326\334\003\361\131\030\350\107\211
\262\127\132\224\266\251\330\027\053\027\111\345\166\313\301\126
\231\072\067\261\377\151\054\221\221\223\341\337\114\243\067\166
\115\241\237\370\155\036\035\323\372\354\373\364\105\035\023\155
\317\367\131\345\042\047\162\053\206\363\127\273\060\355\044\115
\334\175\126\273\243\263\370\064\171\211\301\340\362\002\141\367
\246\374\017\273\034\027\013\256\101\331\174\275\047\243\375\056
\072\321\223\224\261\163\035\044\213\257\133\040\211\255\267\147
\146\171\365\072\306\246\226\063\376\123\222\310\106\261\021\221
\306\231\177\217\311\326\146\061\040\101\020\207\055\014\326\301
\257\064\230\312\144\203\373\023\127\321\301\360\074\172\214\245
\301\375\225\041\240\161\301\223\147\161\022\352\217\210\012\151
\031\144\231\043\126\373\254\052\056\160\276\146\304\014\204\357
\345\213\363\223\001\370\152\220\223\147\113\262\150\243\265\142
\217\351\077\214\172\073\136\017\347\214\270\306\174\357\067\375
\164\342\310\117\063\162\341\224\071\155\275\022\257\276\014\116
\160\174\033\157\215\263\062\223\163\104\026\155\350\364\367\340
\225\200\217\226\135\070\244\364\253\336\012\060\207\223\330\115
\000\161\142\105\047\113\072\102\204\133\177\145\267\147\064\122
\055\234\026\153\252\250\330\173\243\102\114\161\307\014\312\076
\203\344\246\357\267\001\060\136\121\243\171\365\160\151\246\101
\104\017\206\260\054\221\306\075\352\256\017\204

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Microsoft RSA Root Certificate Authority 2017"

Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US

Serial Number: 1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3

Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US

Not Valid Before: Wed Dec 18 22:51:22 2019

Not Valid After : Fri Jul 18 23:00:23 2042

Fingerprint (SHA-256):

```
C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0
# Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
  CK_FALSE
CKA_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\163\245\346\112\073\377\203\026\377\016\334\314\141\212\220\156
\116\256\115\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\020\377\000\377\317\311\370\307\172\300\356\065\216\311\017\107
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177
\105\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
  CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "e-Szigno Root CA 2017"
#
# Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a
# Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Tue Aug 22 12:07:06 2017
# Not Valid After : Fri Aug 22 12:07:06 2042
# Fingerprint (SHA-256):
BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99
# Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "e-Szigno Root CA 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
\060\061\067
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
\060\061\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\001\124\110\357\041\375\227\131\015\365\004\012
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\002\100\060\202\001\345\240\003\002\001\002\002\014\001
\124\110\357\041\375\227\131\015\365\004\012\060\012\006\010\052
\206\110\316\075\004\003\002\060\161\061\013\060\011\006\003\125
\004\006\023\002\110\125\061\021\060\017\006\003\125\004\007\014
\010\102\165\144\141\160\145\163\164\061\026\060\024\006\003\125
\004\012\014\015\115\151\143\162\157\163\145\143\040\114\164\144
\056\061\027\060\025\006\003\125\004\141\014\016\126\101\124\110
\125\055\062\063\065\070\064\064\071\067\061\036\060\034\006\003
\125\004\003\014\025\145\055\123\172\151\147\156\157\040\122\157
\157\164\040\103\101\040\062\060\061\067\060\036\027\015\061\067
\060\070\062\062\061\062\060\067\060\066\132\027\015\064\062\060
\070\062\062\061\062\060\067\060\066\132\060\161\061\013\060\011
\006\003\125\004\006\023\002\110\125\061\021\060\017\006\003\125
\004\007\014\010\102\165\144\141\160\145\163\164\061\026\060\024
\006\003\125\004\012\014\015\115\151\143\162\157\163\145\143\040
\114\164\144\056\061\027\060\025\006\003\125\004\141\014\016\126
\101\124\110\125\055\062\063\065\070\064\064\071\067\061\036\060
\034\006\003\125\004\003\014\025\145\055\123\172\151\147\156\157
```

```
\040\122\157\157\164\040\103\101\040\062\060\061\067\060\131\060
\023\006\007\052\206\110\316\075\002\001\006\010\052\206\110\316
\075\003\001\007\003\102\000\004\226\334\075\212\330\260\173\157
\306\047\276\104\220\261\263\126\025\173\216\103\044\175\032\204
\131\356\143\150\262\306\136\207\320\025\110\036\250\220\255\275
\123\242\332\336\072\220\246\140\137\150\062\265\206\101\337\207
\133\054\173\305\376\174\172\332\243\143\060\141\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006
\003\125\035\016\004\026\004\024\207\021\025\010\321\252\301\170
\014\261\257\316\306\311\220\357\277\060\004\300\060\037\006\003
\125\035\043\004\030\060\026\200\024\207\021\025\010\321\252\301
\170\014\261\257\316\306\311\220\357\277\060\004\300\060\012\006
\010\052\206\110\316\075\004\003\002\003\111\000\060\106\002\041
\000\265\127\335\327\212\125\013\066\341\206\104\372\324\331\150
\215\270\334\043\212\212\015\324\057\175\352\163\354\277\115\154
\250\002\041\000\313\245\264\022\372\347\265\350\317\176\223\374
\363\065\217\157\116\132\174\264\274\116\262\374\162\252\133\131
\371\347\334\061
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "e-Szigno Root CA 2017"

Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU

Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a

Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU

Not Valid Before: Tue Aug 22 12:07:06 2017

Not Valid After : Fri Aug 22 12:07:06 2042

Fingerprint (SHA-256):

BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99

#

Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "e-Szigno Root CA 2017"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\211\324\203\003\117\236\232\110\200\137\162\067\324\251\246\357
\313\174\037\321
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\336\037\366\236\204\256\247\264\041\316\036\130\175\321\204\230
```

END

CKA_ISSUER MULTILINE_OCTAL


```
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
\060\061\067
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\014\001\124\110\357\041\375\227\131\015\365\004\012
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "certSIGN Root CA G2"

#

Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

Serial Number:11:00:34:b6:4e:c6:36:2d:36

Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

Not Valid Before: Mon Feb 06 09:27:35 2017

Not Valid After : Thu Feb 06 09:27:35 2042

Fingerprint (SHA-256):

65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05

Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "certSIGN Root CA G2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT

MULTILINE_OCTAL

```
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
```

\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\011\021\000\064\266\116\306\066\055\066

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\107\060\202\003\057\240\003\002\001\002\002\011\021
\000\064\266\116\306\066\055\066\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\101\061\013\060\011\006\003\125
\004\006\023\002\122\117\061\024\060\022\006\003\125\004\012\023
\013\103\105\122\124\123\111\107\116\040\123\101\061\034\060\032
\006\003\125\004\013\023\023\143\145\162\164\123\111\107\116\040
\122\117\117\124\040\103\101\040\107\062\060\036\027\015\061\067
\060\062\060\066\060\071\062\067\063\065\132\027\015\064\062\060
\062\060\066\060\071\062\067\063\065\132\060\101\061\013\060\011
\006\003\125\004\006\023\002\122\117\061\024\060\022\006\003\125
\004\012\023\013\103\105\122\124\123\111\107\116\040\123\101\061
\034\060\032\006\003\125\004\013\023\023\143\145\162\164\123\111
\107\116\040\122\117\117\124\040\103\101\040\107\062\060\202\002
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\300\305
\165\031\221\175\104\164\164\207\376\016\073\226\334\330\001\026
\314\356\143\221\347\013\157\316\073\012\151\032\174\302\343\257
\202\216\206\327\136\217\127\353\323\041\131\375\071\067\102\060
\276\120\352\266\017\251\210\330\056\055\151\041\347\321\067\030
\116\175\221\325\026\137\153\133\000\302\071\103\015\066\205\122
\271\123\145\017\035\102\345\217\317\005\323\356\334\014\032\331
\270\213\170\042\147\344\151\260\150\305\074\344\154\132\106\347
\315\307\372\357\304\354\113\275\152\244\254\375\314\050\121\357
\222\264\051\253\253\065\232\114\344\304\010\306\046\314\370\151
\237\344\234\360\051\323\134\371\306\026\045\236\043\303\040\301
\075\017\077\070\100\260\376\202\104\070\252\132\032\212\153\143
\130\070\264\025\323\266\021\151\173\036\124\356\214\032\042\254
\162\227\077\043\131\233\311\042\204\301\007\117\314\177\342\127
\312\022\160\273\246\145\363\151\165\143\275\225\373\033\227\315
\344\250\257\366\321\116\250\331\212\161\044\315\066\075\274\226
\304\361\154\251\256\345\317\015\156\050\015\260\016\265\312\121
\173\170\024\303\040\057\177\373\024\125\341\021\231\375\325\012
\241\236\002\343\142\137\353\065\113\054\270\162\350\076\075\117
\254\054\273\056\206\342\243\166\217\345\223\052\317\245\253\310
\134\215\113\006\377\022\106\254\170\313\024\007\065\340\251\337
\213\351\257\025\117\026\211\133\275\366\215\306\131\256\210\205
\016\301\211\353\037\147\305\105\216\377\155\067\066\053\170\146
\203\221\121\053\075\377\121\167\166\142\241\354\147\076\076\201
\203\340\126\251\120\037\037\172\231\253\143\277\204\027\167\361
\015\073\337\367\234\141\263\065\230\212\072\262\354\074\032\067
\077\176\217\222\317\331\022\024\144\332\020\002\025\101\377\117

\304\353\034\243\311\372\231\367\106\351\341\030\331\261\270\062
\055\313\024\014\120\330\203\145\203\356\271\134\317\313\005\132
\114\372\031\227\153\326\135\023\323\302\134\124\274\062\163\240
\170\365\361\155\036\313\237\245\246\237\042\334\321\121\236\202
\171\144\140\051\023\076\243\375\117\162\152\253\342\324\345\270
\044\125\054\104\113\212\210\104\234\312\204\323\052\073\002\003
\001\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004
\026\004\024\202\041\055\146\306\327\240\340\025\353\316\114\011
\167\304\140\236\124\156\003\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\003\202\002\001\000\140\336\032\270\347
\362\140\202\325\003\063\201\313\006\212\361\042\111\351\350\352
\221\177\306\063\136\150\031\003\206\073\103\001\317\007\160\344
\010\036\145\205\221\346\021\042\267\365\002\043\216\256\271\036
\175\037\176\154\346\275\045\325\225\032\362\005\246\257\205\002
\157\256\370\326\061\377\045\311\112\310\307\212\251\331\237\113
\111\233\021\127\231\222\103\021\336\266\063\244\314\327\215\144
\175\324\315\074\050\054\264\232\226\352\115\365\304\104\304\045
\252\040\200\330\051\125\367\340\101\374\006\046\377\271\066\365
\103\024\003\146\170\341\021\261\332\040\137\106\000\170\000\041
\245\036\000\050\141\170\157\250\001\001\217\235\064\232\377\364
\070\220\373\270\321\263\162\006\311\161\346\201\305\171\355\013
\246\171\362\023\013\234\367\135\016\173\044\223\264\110\333\206
\137\336\120\206\170\347\100\346\061\250\220\166\160\141\257\234
\067\054\021\265\202\267\252\256\044\064\133\162\014\151\015\315
\131\237\366\161\257\234\013\321\012\070\371\006\042\203\123\045
\014\374\121\304\346\276\342\071\225\013\044\255\257\321\225\344
\226\327\164\144\153\161\116\002\074\252\205\363\040\243\103\071
\166\133\154\120\376\232\234\024\036\145\024\212\025\275\243\202
\105\132\111\126\152\322\234\261\143\062\345\141\340\123\042\016
\247\012\111\352\313\176\037\250\342\142\200\366\020\105\122\230
\006\030\336\245\315\057\177\252\324\351\076\010\162\354\043\003
\002\074\246\252\330\274\147\164\075\024\027\373\124\113\027\343
\323\171\075\155\153\111\311\050\016\056\164\120\277\014\331\106
\072\020\206\311\247\077\351\240\354\177\353\245\167\130\151\161
\346\203\012\067\362\206\111\152\276\171\010\220\366\002\026\144
\076\345\332\114\176\014\064\311\371\137\266\263\050\121\247\247
\053\252\111\372\215\145\051\116\343\153\023\247\224\243\055\121
\155\170\014\104\313\337\336\010\157\316\243\144\253\323\225\204
\324\271\122\124\162\173\226\045\314\274\151\343\110\156\015\320
\307\235\047\232\252\370\023\222\335\036\337\143\237\065\251\026
\066\354\214\270\203\364\075\211\217\315\264\027\136\327\263\027
\101\020\135\047\163\140\205\127\111\042\007

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "certSIGN Root CA G2"

Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

Serial Number:11:00:34:b6:4e:c6:36:2d:36

Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO

Not Valid Before: Mon Feb 06 09:27:35 2017

Not Valid After : Thu Feb 06 09:27:35 2042

Fingerprint (SHA-256):

65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05

Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8

"certSIGN Root CA G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\046\371\223\264\355\075\050\047\260\271\113\247\351\025\035\243
\215\222\345\062

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\214\361\165\212\306\031\317\224\267\367\145\040\207\303\227\307
END

CKA_ISSUER MULTILINE_OCTAL

\060\101\061\013\060\011\006\003\125\004\006\023\002\122\117\061
\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111
\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023
\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101
\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\011\021\000\064\266\116\306\066\055\066

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Trustwave Global Certification Authority"

#

Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US

#

Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2

Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US

```
# Not Valid Before: Wed Aug 23 19:34:12 2017
# Not Valid After : Sat Aug 23 19:34:12 2042
# Fingerprint (SHA-256):
97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8
# Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\005\367\016\206\332\111\363\106\065\056\272\262
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\005\332\060\202\003\302\240\003\002\001\002\002\014\005
\367\016\206\332\111\363\106\065\056\272\262\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\060\201\210\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006\003
\125\004\010\014\010\111\154\154\151\156\157\151\163\061\020\060
\016\006\003\125\004\007\014\007\103\150\151\143\141\147\157\061
\041\060\037\006\003\125\004\012\014\030\124\162\165\163\164\167
\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111\156
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\143\056\061\061\060\057\006\003\125\004\003\014\050\124\162\165
\163\164\167\141\166\145\040\107\154\157\142\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\060\036\027\015\061\067\060\070\062\063\061
\071\063\064\061\062\132\027\015\064\062\060\070\062\063\061\071
\063\064\061\062\132\060\201\210\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\021\060\017\006\003\125\004\010\014\010
\111\154\154\151\156\157\151\163\061\020\060\016\006\003\125\004
\007\014\007\103\150\151\143\141\147\157\061\041\060\037\006\003
\125\004\012\014\030\124\162\165\163\164\167\141\166\145\040\110
\157\154\144\151\156\147\163\054\040\111\156\143\056\061\061\060
\057\006\003\125\004\003\014\050\124\162\165\163\164\167\141\166
\145\040\107\154\157\142\141\154\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\271\135\121\050\113\074\067\222\321\202\316\275\035\275\315
\335\270\253\317\012\076\341\135\345\334\252\011\271\127\002\076
\346\143\141\337\362\017\202\143\256\243\367\254\163\321\174\347
\263\013\257\010\000\011\131\177\315\051\052\210\223\207\027\030
\200\355\210\262\264\266\020\037\055\326\137\125\242\023\135\321
\306\353\006\126\211\210\376\254\062\235\375\134\303\005\307\156
\356\206\211\272\210\003\235\162\041\206\220\256\217\003\245\334
\237\210\050\313\243\222\111\017\354\320\017\342\155\104\117\200
\152\262\324\347\240\012\123\001\272\216\227\221\166\156\274\374
\325\153\066\346\100\210\326\173\057\137\005\350\054\155\021\363
\347\262\276\222\104\114\322\227\244\376\322\162\201\103\007\234
\351\021\076\365\213\032\131\175\037\150\130\335\004\000\054\226
\363\103\263\176\230\031\164\331\234\163\331\030\276\101\307\064
\171\331\364\142\302\103\271\263\047\260\042\313\371\075\122\307
\060\107\263\311\076\270\152\342\347\350\201\160\136\102\213\117
\046\245\376\072\302\040\156\273\370\026\216\315\014\251\264\033
\154\166\020\341\130\171\106\076\124\316\200\250\127\011\067\051
\033\231\023\217\014\310\326\054\034\373\005\350\010\225\075\145
\106\334\356\315\151\342\115\217\207\050\116\064\013\076\317\024
\331\273\335\266\120\232\255\167\324\031\326\332\032\210\310\116
\033\047\165\330\262\010\361\256\203\060\271\021\016\315\207\360
\204\215\025\162\174\241\357\314\362\210\141\272\364\151\273\014
\214\013\165\127\004\270\116\052\024\056\075\017\034\036\062\246
\142\066\356\146\342\042\270\005\100\143\020\042\363\063\035\164
\162\212\054\365\071\051\240\323\347\033\200\204\055\305\075\343
\115\261\375\032\157\272\145\007\073\130\354\102\105\046\373\330
\332\045\162\304\366\000\261\042\171\275\343\174\131\142\112\234
\005\157\075\316\346\326\107\143\231\306\044\157\162\022\310\254
\177\220\264\013\221\160\350\267\346\026\020\161\027\316\336\006
\117\110\101\175\065\112\243\211\362\311\113\173\101\021\155\147
\267\010\230\114\345\021\031\256\102\200\334\373\220\005\324\370
\120\312\276\344\255\307\302\224\327\026\235\346\027\217\257\066

\373\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125
\035\016\004\026\004\024\231\340\031\147\015\142\333\166\263\332
\075\270\133\350\375\102\322\061\016\207\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\230\163
\160\342\260\323\355\071\354\114\140\331\251\022\206\027\036\226
\320\350\124\050\073\144\055\041\246\370\235\126\023\152\110\075
\117\307\076\051\333\155\130\203\124\075\207\175\043\005\324\344
\034\334\350\070\145\206\305\165\247\132\333\065\005\275\167\336
\273\051\067\100\005\007\303\224\122\237\312\144\335\361\033\053
\334\106\012\020\002\061\375\112\150\015\007\144\220\346\036\365
\052\241\250\273\074\135\371\243\010\013\021\014\361\077\055\020
\224\157\376\342\064\207\203\326\317\345\033\065\155\322\003\341
\260\015\250\240\252\106\047\202\066\247\025\266\010\246\102\124
\127\266\231\132\342\013\171\220\327\127\022\121\065\031\210\101
\150\045\324\067\027\204\025\373\001\162\334\225\336\122\046\040
\230\046\342\166\365\047\157\372\000\073\112\141\331\015\313\121
\223\052\375\026\006\226\247\043\232\043\110\376\121\275\266\304
\260\261\124\316\336\154\101\255\026\147\176\333\375\070\315\271
\070\116\262\301\140\313\235\027\337\130\236\172\142\262\046\217
\164\225\233\344\133\035\322\017\335\230\034\233\131\271\043\323
\061\240\246\377\070\335\317\040\117\351\130\126\072\147\303\321
\366\231\231\235\272\066\266\200\057\210\107\117\206\277\104\072
\200\344\067\034\246\272\352\227\230\021\320\204\142\107\144\036
\252\356\100\277\064\261\234\217\116\341\362\222\117\037\216\363
\236\227\336\363\246\171\152\211\161\117\113\047\027\110\376\354
\364\120\017\117\111\175\314\105\343\275\172\100\305\101\334\141
\126\047\006\151\345\162\101\201\323\266\001\211\240\057\072\162
\171\376\072\060\277\101\354\307\142\076\221\113\307\331\061\166
\102\371\367\074\143\354\046\214\163\014\175\032\035\352\250\174
\207\250\302\047\174\341\063\101\017\317\317\374\000\240\042\200
\236\112\247\157\000\260\101\105\267\042\312\150\110\305\102\242
\256\335\035\362\340\156\116\005\130\261\300\220\026\052\244\075
\020\100\276\217\142\143\203\251\234\202\175\055\002\351\203\060
\174\313\047\311\375\036\146\000\260\056\323\041\057\216\063\026
\154\230\355\020\250\007\326\314\223\317\333\321\151\034\344\312
\311\340\266\234\351\316\161\161\336\154\077\026\244\171

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Trustwave Global Certification Authority"

Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US

Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2

```
# Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Not Valid Before: Wed Aug 23 19:34:12 2017
# Not Valid After : Sat Aug 23 19:34:12 2042
# Fingerprint (SHA-256):
97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8
# Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\057\217\066\117\341\130\227\104\041\131\207\245\052\232\320\151
\225\046\177\265
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\034\030\055\057\272\137\155\241\154\274\307\253\221\307\016
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\005\367\016\206\332\111\363\106\065\056\272\262
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Trustwave Global ECC P256 Certification Authority"
#
# Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d
# Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
```



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# Not Valid Before: Wed Aug 23 19:35:10 2017
# Not Valid After : Sat Aug 23 19:35:10 2042
# Fingerprint (SHA-256):
94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4
# Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global ECC P256 Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\014\015\152\137\010\077\050\134\076\121\225\337\135
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\140\060\202\002\007\240\003\002\001\002\002\014\015
\152\137\010\077\050\134\076\121\225\337\135\060\012\006\010\052
\206\110\316\075\004\003\002\060\201\221\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\021\060\017\006\003\125\004\010
\023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003
\125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037
```

\006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145
\040\110\157\154\144\151\156\147\163\054\040\111\156\143\056\061
\072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167
\141\166\145\040\107\154\157\142\141\154\040\105\103\103\040\120
\062\065\066\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061
\067\060\070\062\063\061\071\063\065\061\060\132\027\015\064\062
\060\070\062\063\061\071\063\065\061\060\132\060\201\221\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006
\003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020
\060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157
\061\041\060\037\006\003\125\004\012\023\030\124\162\165\163\164
\167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111
\156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162
\165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\105
\103\103\040\120\062\065\066\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060
\131\060\023\006\007\052\206\110\316\075\002\001\006\010\052\206
\110\316\075\003\001\007\003\102\000\004\176\373\154\346\043\343
\163\062\010\312\140\346\123\234\272\164\215\030\260\170\220\122
\200\335\070\300\112\035\321\250\314\223\244\227\006\070\312\015
\025\142\306\216\001\052\145\235\252\337\064\221\056\201\301\344
\063\222\061\304\375\011\072\246\077\255\243\103\060\101\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\017\006\003\125\035\017\001\001\377\004\005\003\003\007\006\000
\060\035\006\003\125\035\016\004\026\004\024\243\101\006\254\220
\155\321\112\353\165\245\112\020\231\263\261\241\213\112\367\060
\012\006\010\052\206\110\316\075\004\003\002\003\107\000\060\104
\002\040\007\346\124\332\016\240\132\262\256\021\237\207\305\266
\377\151\336\045\276\370\240\267\010\363\104\316\052\337\010\041
\014\067\002\040\055\046\003\240\005\275\153\321\366\134\370\145
\314\206\155\263\234\064\110\143\204\011\305\215\167\032\342\314
\234\341\164\173

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "Trustwave Global ECC P256 Certification Authority"

Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d

Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

Not Valid Before: Wed Aug 23 19:35:10 2017

Not Valid After : Sat Aug 23 19:35:10 2042

Fingerprint (SHA-256):

```
94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4
# Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global ECC
P256 Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\264\220\202\335\105\014\276\213\133\261\146\323\342\244\010\046
\315\355\102\317
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\133\104\343\215\135\066\206\046\350\015\005\322\131\247\203\124
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\014\015\152\137\010\077\050\134\076\121\225\337\135
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Trustwave Global ECC P384 Certification Authority"
#
# Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b
# Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Not Valid Before: Wed Aug 23 19:36:43 2017
# Not Valid After : Sat Aug 23 19:36:43 2042
# Fingerprint (SHA-256):
55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97
```

Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL

UTF8 "Trustwave Global ECC P384 Certification Authority"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\014\010\275\205\227\154\231\047\244\200\150\107\073

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\235\060\202\002\044\240\003\002\001\002\002\014\010
\275\205\227\154\231\047\244\200\150\107\073\060\012\006\010\052
\206\110\316\075\004\003\003\060\201\221\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\021\060\017\006\003\125\004\010
\023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003
\125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037
\006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145
\040\110\157\154\144\151\156\147\163\054\040\111\156\143\056\061
\072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167
\141\166\145\040\107\154\157\142\141\154\040\105\103\103\040\120

\063\070\064\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061
\067\060\070\062\063\061\071\063\066\064\063\132\027\015\064\062
\060\070\062\063\061\071\063\066\064\063\132\060\201\221\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\021\060\017\006
\003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020
\060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157
\061\041\060\037\006\003\125\004\012\023\030\124\162\165\163\164
\167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111
\156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162
\165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\105
\103\103\040\120\063\070\064\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\153\332\015\165\065\010\061\107\005
\256\105\231\125\361\021\023\056\112\370\020\061\043\243\176\203
\323\177\050\010\072\046\032\072\317\227\202\037\200\267\047\011
\217\321\216\060\304\012\233\016\254\130\004\253\367\066\175\224
\043\244\233\012\212\213\253\353\375\071\045\146\361\136\376\214
\256\215\101\171\235\011\140\316\050\251\323\212\155\363\326\105
\324\362\230\204\070\145\240\243\103\060\101\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\017\006\003
\125\035\017\001\001\377\004\005\003\003\007\006\000\060\035\006
\003\125\035\016\004\026\004\024\125\251\204\211\322\301\062\275
\030\313\154\246\007\116\310\347\235\276\202\220\060\012\006\010
\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060\067
\001\222\227\105\022\176\240\363\076\255\031\072\162\335\364\120
\223\003\022\276\104\322\117\101\244\214\234\235\037\243\366\302
\222\347\110\024\376\116\233\245\221\127\256\306\067\162\273\002
\060\147\045\012\261\014\136\356\251\143\222\157\345\220\013\376
\146\042\312\107\375\212\061\367\203\376\172\277\020\276\030\053
\036\217\366\051\036\224\131\357\216\041\067\313\121\230\245\156
\113

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "Trustwave Global ECC P384 Certification Authority"

Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b

Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

Not Valid Before: Wed Aug 23 19:36:43 2017

Not Valid After : Sat Aug 23 19:36:43 2042

Fingerprint (SHA-256):

```
55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97
# Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global ECC P384 Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\347\363\243\310\317\157\303\004\056\155\016\147\062\305\236\150
\225\015\136\322
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\352\317\140\304\073\271\025\051\100\241\227\355\170\047\223\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\014\010\275\205\227\154\231\047\244\200\150\107\073
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "NAVER Global Root Certification Authority"
#
# Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
# Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d
# Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
# Not Valid Before: Fri Aug 18 08:58:42 2017
# Not Valid After : Tue Aug 18 23:59:59 2037
# Fingerprint (SHA-256):
88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65
# Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1
CKA_CLASS
```

```
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NAVER Global Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\001\224\060\036\242\013\335\365\305\063\052\261\103\104
\161\370\326\120\115\015
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\242\060\202\003\212\240\003\002\001\002\002\024\001
\224\060\036\242\013\335\365\305\063\052\261\103\104\161\370\326
\120\115\015\060\015\006\011\052\206\110\206\367\015\001\001\014
\005\000\060\151\061\013\060\011\006\003\125\004\006\023\002\113
\122\061\046\060\044\006\003\125\004\012\014\035\116\101\126\105
\122\040\102\125\123\111\116\105\123\123\040\120\114\101\124\106
\117\122\115\040\103\157\162\160\056\061\062\060\060\006\003\125
\004\003\014\051\116\101\126\105\122\040\107\154\157\142\141\154
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036\027
\015\061\067\060\070\061\070\060\070\065\070\064\062\132\027\015
\063\067\060\070\061\070\062\063\065\071\065\071\132\060\151\061
\013\060\011\006\003\125\004\006\023\002\113\122\061\046\060\044
\006\003\125\004\012\014\035\116\101\126\105\122\040\102\125\123
\111\116\105\123\123\040\120\114\101\124\106\117\122\115\040\103
\157\162\160\056\061\062\060\060\006\003\125\004\003\014\051\116
\101\126\105\122\040\107\154\157\142\141\154\040\122\157\157\164
```

\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\266\324\361\223\134\265\100
\211\012\253\015\220\133\120\143\256\220\224\164\027\105\162\326
\173\145\132\051\113\247\126\240\113\270\057\102\165\351\331\173
\044\132\061\145\253\027\027\321\063\072\331\021\334\100\066\207
\337\307\152\351\046\136\131\212\167\343\350\110\234\061\026\372
\076\221\261\312\311\243\342\237\316\041\123\243\002\066\060\313
\122\002\345\332\062\135\303\305\346\371\356\021\307\213\311\104
\036\204\223\030\112\264\237\345\022\144\151\320\046\205\142\001
\266\311\002\035\276\203\121\273\134\332\370\255\025\152\231\367
\222\124\367\064\133\351\277\352\051\201\022\324\123\221\226\263
\221\132\335\376\220\163\050\373\060\106\265\312\010\007\307\161
\162\311\146\323\064\227\366\214\364\030\112\341\320\075\132\105
\266\151\247\051\373\043\316\210\330\022\234\000\110\250\246\017
\263\073\222\215\161\016\164\305\213\310\114\371\364\233\216\270
\074\151\355\157\073\120\057\130\355\304\260\320\034\033\152\014
\342\274\104\252\330\315\024\135\224\170\141\277\016\156\332\052
\274\057\014\013\161\246\263\026\077\234\346\371\314\237\123\065
\342\003\240\240\030\277\273\361\276\364\326\214\207\015\102\367
\006\271\361\155\355\004\224\250\376\266\323\006\306\100\141\337
\235\235\363\124\166\316\123\072\001\246\222\101\354\004\243\217
\015\242\325\011\312\326\313\232\361\357\103\135\300\253\245\101
\317\134\123\160\160\311\210\246\055\324\153\141\163\120\046\206
\141\016\137\033\302\053\342\214\325\273\235\301\003\102\272\224
\332\137\251\260\312\314\115\012\357\107\151\003\057\042\373\361
\050\316\277\135\120\145\250\220\155\263\164\260\010\307\254\250
\321\353\076\234\374\135\032\203\056\053\313\265\363\104\235\072
\247\027\141\226\242\161\323\160\226\025\115\267\114\163\356\031
\134\305\133\076\101\376\254\165\140\073\033\143\316\000\335\332
\010\220\142\264\345\055\356\110\247\153\027\231\124\276\207\112
\343\251\136\004\114\353\020\155\124\326\357\361\350\362\142\026
\313\200\153\355\075\355\365\037\060\245\256\113\311\023\355\212
\001\001\311\270\121\130\300\146\072\261\146\113\304\325\061\002
\142\351\164\204\014\333\115\106\055\002\003\001\000\001\243\102
\060\100\060\035\006\003\125\035\016\004\026\004\024\322\237\210
\337\241\315\054\275\354\365\073\001\001\223\063\047\262\353\140
\113\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005
\000\003\202\002\001\000\062\312\200\263\235\075\124\006\335\322
\322\056\360\244\001\041\013\147\110\312\155\216\340\310\252\015
\252\215\041\127\217\306\076\172\312\333\121\324\122\263\324\226
\204\245\130\140\177\345\013\216\037\365\334\012\025\201\345\073
\266\267\042\057\011\234\023\026\261\154\014\065\010\155\253\143
\162\355\334\276\354\307\127\346\060\040\161\326\327\020\301\023
\125\001\214\052\103\344\101\361\317\072\172\123\222\316\242\003

\005\015\070\337\002\273\020\056\331\073\322\233\172\300\241\246
\370\265\061\346\364\165\311\271\123\231\165\107\042\132\024\025
\307\170\033\266\235\351\014\370\033\166\361\205\204\336\241\332
\022\357\244\342\020\227\172\170\336\014\121\227\250\041\100\213
\206\275\015\360\136\116\113\066\273\073\040\037\212\102\126\341
\013\032\277\173\320\042\103\054\104\214\373\345\052\264\154\034
\034\272\224\340\023\176\041\346\232\302\313\305\102\144\264\036
\224\173\010\045\310\161\314\207\105\127\205\323\237\051\142\042
\203\121\227\000\030\227\167\152\230\222\311\174\140\154\337\154
\175\112\344\160\114\302\236\270\035\367\320\064\307\017\314\373
\247\377\003\276\255\160\220\332\013\335\310\155\227\137\232\177
\011\062\101\375\315\242\314\132\155\114\362\252\111\376\146\370
\351\330\065\353\016\050\036\356\110\057\072\320\171\011\070\174
\246\042\202\223\225\320\003\276\276\002\240\005\335\040\042\343
\157\035\210\064\140\306\346\012\271\011\165\013\360\007\350\151
\226\065\307\373\043\201\216\070\071\270\105\053\103\170\242\321
\054\024\377\015\050\162\162\225\233\136\011\333\211\104\230\252
\241\111\273\161\122\362\277\366\377\047\241\066\257\270\266\167
\210\335\072\244\155\233\064\220\334\024\135\060\277\267\353\027
\344\207\267\161\320\241\327\167\025\324\102\327\362\363\061\231
\135\233\335\026\155\077\352\006\043\370\106\242\042\355\223\366
\335\232\346\052\207\261\230\124\361\042\367\153\105\343\342\216
\166\035\232\215\304\006\215\066\267\024\363\235\124\151\267\216
\074\325\244\155\223\201\267\255\366\275\144\173\302\311\150\071
\240\222\234\315\064\206\221\220\372\144\121\235\376\376\353\245
\365\165\336\211\367\162

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "NAVER Global Root Certification Authority"

Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR

Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d

Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR

Not Valid Before: Fri Aug 18 08:58:42 2017

Not Valid After : Tue Aug 18 23:59:59 2037

Fingerprint (SHA-256):

88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65

Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "NAVER Global Root Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\217\153\362\251\047\112\332\024\240\304\364\216\141\047\371\300
\036\170\135\321

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\310\176\101\366\045\073\365\011\263\027\350\106\075\277\320\233
END

CKA_ISSUER MULTILINE_OCTAL

\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003
\014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\024\001\224\060\036\242\013\335\365\305\063\052\261\103\104
\161\370\326\120\115\015

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

#

Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95

Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

Not Valid Before: Thu Dec 20 09:37:33 2018

Not Valid After : Sun Dec 20 09:37:33 2043

Fingerprint (SHA-256):

55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB

Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8

"AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122

\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122
\105\123\040\123\105\107\125\122\117\123

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122
\105\123\040\123\105\107\125\122\117\123

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056
\235\225

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\156\060\202\001\363\240\003\002\001\002\002\020\142
\366\062\154\345\304\343\150\134\033\142\335\234\056\235\225\060
\012\006\010\052\206\110\316\075\004\003\003\060\170\061\013\060
\011\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003
\125\004\012\014\010\106\116\115\124\055\122\103\115\061\016\060
\014\006\003\125\004\013\014\005\103\145\162\145\163\061\030\060
\026\006\003\125\004\141\014\017\126\101\124\105\123\055\121\062
\070\062\066\060\060\064\112\061\054\060\052\006\003\125\004\003
\014\043\101\103\040\122\101\111\132\040\106\116\115\124\055\122
\103\115\040\123\105\122\126\111\104\117\122\105\123\040\123\105
\107\125\122\117\123\060\036\027\015\061\070\061\062\062\060\060
\071\063\067\063\063\132\027\015\064\063\061\062\062\060\060\071
\063\067\063\063\132\060\170\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\021\060\017\006\003\125\004\012\014\010\106
\116\115\124\055\122\103\115\061\016\060\014\006\003\125\004\013
\014\005\103\145\162\145\163\061\030\060\026\006\003\125\004\141
\014\017\126\101\124\105\123\055\121\062\070\062\066\060\060\064
\112\061\054\060\052\006\003\125\004\003\014\043\101\103\040\122
\101\111\132\040\106\116\115\124\055\122\103\115\040\123\105\122
\126\111\104\117\122\105\123\040\123\105\107\125\122\117\123\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\366\272\127\123\310\312\253\337\066
\112\122\041\344\227\322\203\147\236\360\145\121\320\136\207\307
\107\261\131\362\127\107\233\000\002\223\104\027\151\333\102\307

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\261\262\072\030\016\264\135\214\263\146\135\241\064\371\066\054
\111\333\363\106\374\263\104\151\104\023\146\375\327\305\375\257
\066\115\316\003\115\007\161\317\257\152\005\322\242\103\132\012
\122\157\001\003\116\216\213\243\102\060\100\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003
\125\035\016\004\026\004\024\001\271\057\357\277\021\206\140\362
\117\320\101\156\253\163\037\347\322\156\111\060\012\006\010\052
\206\110\316\075\004\003\003\003\151\000\060\146\002\061\000\256
\112\343\053\100\303\164\021\362\225\255\026\043\336\116\014\032
\346\135\245\044\136\153\104\173\374\070\342\117\313\234\105\027
\021\114\024\047\046\125\071\165\112\003\314\023\220\237\222\002
\061\000\372\112\154\140\210\163\363\356\270\230\142\251\316\053
\302\331\212\246\160\061\035\257\260\224\114\353\117\306\343\321
\363\142\247\074\377\223\056\007\134\111\001\147\151\022\002\162
\277\347
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "AC

RAIZ FNMT-RCM SERVIDORES SEGUROS"

Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95

Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

Not Valid Before: Thu Dec 20 09:37:33 2018

Not Valid After : Sun Dec 20 09:37:33 2043

Fingerprint (SHA-256):

55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB

Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\142\377\331\236\300\145\015\003\316\165\223\322\355\077\055\062
\311\343\345\112
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\031\066\234\122\003\057\322\321\273\043\314\335\036\022\125\273
```

END

CKA_ISSUER

MULTILINE_OCTAL

\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162
\145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124
\105\123\055\121\062\070\062\066\060\060\064\112\061\054\060\052
\006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106
\116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122
\105\123\040\123\105\107\125\122\117\123

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056
\235\225

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "GlobalSign Secure Mail Root R45"

#

Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE

Serial Number:76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc

#

Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 18 00:00:00 2020

Not Valid After : Sat Mar 18 00:00:00 2045

Fingerprint (SHA-256):

31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74

Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Secure Mail Root R45"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217
\127\334

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\160\060\202\003\130\240\003\002\001\002\002\020\166
\123\376\250\114\120\253\237\215\062\265\035\003\217\127\334\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\122
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060
\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151
\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125\004
\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123\145
\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040\122
\064\065\060\036\027\015\062\060\060\063\061\070\060\060\060\060
\060\060\132\027\015\064\065\060\063\061\070\060\060\060\060\060
\060\132\060\122\061\013\060\011\006\003\125\004\006\023\002\102
\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142
\141\154\123\151\147\156\040\156\166\055\163\141\061\050\060\046
\006\003\125\004\003\023\037\107\154\157\142\141\154\123\151\147
\156\040\123\145\143\165\162\145\040\115\141\151\154\040\122\157
\157\164\040\122\064\065\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\334\171\314\155\006\371\155\273\340
\126\004\154\177\340\165\314\055\005\111\350\113\334\124\354\133
\167\225\162\277\177\142\235\205\251\212\044\120\137\123\345\333
\164\157\244\051\133\023\052\011\255\232\305\057\302\367\166\073
\241\105\106\252\103\346\044\376\053\260\157\062\160\031\106\132
\171\046\057\374\075\175\137\144\313\127\314\141\141\250\331\225
\156\343\225\240\156\177\107\022\030\326\357\003\311\373\212\372
\232\275\202\025\251\125\167\113\021\117\131\340\153\303\161\363
\014\330\124\325\201\150\076\023\271\025\056\207\212\074\104\047
\066\142\044\156\370\054\005\162\060\141\275\102\221\043\304\235
\045\247\331\124\232\024\243\061\255\200\171\014\247\143\154\230
\243\254\127\107\063\037\145\226\341\320\322\065\332\371\161\367
\241\246\045\265\101\135\337\076\140\330\321\366\237\245\362\270
\314\023\252\217\371\262\156\341\203\055\223\335\076\205\032\335
\350\261\134\046\001\313\111\205\374\374\322\324\177\205\142\206
\164\371\313\354\065\042\242\014\060\217\073\253\171\353\126\362
\372\102\363\355\371\037\105\211\100\051\255\352\222\164\352\122
\375\126\264\053\332\242\355\165\302\156\253\316\122\220\113\366
\336\360\111\217\232\110\324\210\031\155\105\346\314\214\271\335

\144\140\140\002\100\370\271\317\274\130\353\075\205\271\306\012
\323\234\007\146\217\307\030\071\043\106\341\074\036\243\057\120
\141\222\013\075\053\154\361\243\107\070\127\221\253\015\217\306
\235\115\004\322\046\122\134\345\245\375\052\055\026\052\001\151
\347\251\175\341\066\267\261\052\305\331\261\215\275\271\213\316
\314\213\241\076\013\110\315\120\225\064\304\330\010\131\330\153
\046\364\276\365\324\042\027\000\127\311\256\233\004\060\063\237
\013\373\337\126\242\311\156\124\166\332\261\227\142\047\131\017
\021\212\042\033\144\226\077\250\361\267\044\112\215\074\123\174
\155\203\166\075\262\046\110\163\365\104\026\001\055\011\052\216
\026\226\120\320\163\006\135\273\042\110\202\114\012\106\132\077
\200\377\134\362\362\232\254\054\010\340\326\352\360\022\070\201
\117\246\020\355\106\253\314\026\234\013\317\144\246\231\002\205
\104\147\106\255\375\115\347\002\003\001\000\001\243\102\060\100
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\035\006\003\125\035\016\004\026\004\024\240\223\025\050
\156\356\217\010\262\065\306\236\142\171\164\247\261\016\053\173
\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003
\202\002\001\000\105\012\370\321\134\254\142\201\320\004\327\266
\377\127\121\211\013\014\313\336\044\145\067\373\253\236\355\146
\364\352\014\031\151\211\270\031\261\060\126\264\331\366\367\276
\306\256\227\313\105\366\021\214\072\060\144\114\301\237\131\300
\106\102\010\006\107\144\027\170\340\225\007\006\326\214\242\254
\251\331\077\323\173\126\117\374\304\207\050\337\266\053\026\043
\300\237\037\133\343\326\104\136\042\117\043\004\214\065\026\265
\171\007\206\134\057\227\342\366\010\144\246\334\333\250\212\343
\244\173\167\015\321\051\223\050\040\264\123\243\113\116\137\336
\301\366\165\043\374\037\074\170\117\160\061\170\057\242\065\124
\161\004\254\310\304\155\303\366\221\261\376\315\356\104\156\201
\366\100\305\076\052\001\277\253\114\261\003\077\015\021\344\017
\322\044\343\042\210\233\237\137\107\075\121\111\340\011\067\176
\027\041\061\166\267\147\161\110\050\113\045\327\020\350\237\141
\131\026\305\076\062\116\037\014\316\243\314\017\344\307\021\007
\042\057\070\010\335\133\227\353\102\154\131\232\232\356\172\320
\235\337\305\333\011\103\056\012\252\031\075\153\350\152\060\172
\127\346\277\263\152\071\251\217\343\361\117\145\150\266\275\237
\050\217\241\026\132\011\120\072\062\056\035\057\104\021\102\246
\000\346\061\230\377\055\241\017\346\244\140\126\317\171\327\262
\116\327\260\372\156\014\127\043\307\316\037\245\261\114\155\031
\111\236\016\177\160\217\161\077\130\050\237\165\335\141\340\072
\267\071\266\356\227\324\065\121\373\213\111\140\310\074\146\256
\227\356\215\046\131\127\273\170\360\172\120\060\011\260\140\252
\237\116\334\311\076\036\072\334\142\223\063\260\072\124\164\157
\054\061\105\321\153\021\062\152\150\166\366\075\366\152\023\136
\044\230\347\352\035\232\317\170\202\007\140\367\115\020\323\201
\232\105\215\236\257\233\334\200\307\103\262\225\150\244\303\016
\350\012\107\025\277\124\063\334\001\347\325\246\036\163\330\172

```
\262\277\057\255\343\125\060\236\337\016\101\274\340\021\365\241
\014\250\042\341\343\000\243\116\160\174\222\343\004\321\172\102
\212\165\220\131\343\233\321\114\242\144\275\163\171\233\157\362
\263\301\366\074
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GlobalSign Secure Mail Root R45"

Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE

Serial Number:76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc

Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 18 00:00:00 2020

Not Valid After : Sat Mar 18 00:00:00 2045

Fingerprint (SHA-256):

31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74

Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Secure Mail Root R45"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\166\030\321\363\200\044\075\122\100\306\021\152\255\127\167\011
\175\201\060\240
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\223\304\173\263\016\124\107\034\103\054\213\276\160\205\142\051
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217
\127\334
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL

CK_FALSE

```
#
# Certificate "GlobalSign Secure Mail Root E45"
#
# Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a
# Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After : Sat Mar 18 00:00:00 2045
# Fingerprint (SHA-256):
5C:BF:6F:B8:1F:D4:17:EA:41:28:CD:6F:81:72:A3:C9:40:20:94:F7:4A:B2:ED:3A:06:B4:40:5D:04:F3:0B:19
# Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root E45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270
\220\012
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\041\060\202\001\247\240\003\002\001\002\002\020\166
\123\376\252\047\035\225\106\135\326\361\236\345\270\220\012\060
\012\006\010\052\206\110\316\075\004\003\003\060\122\061\013\060
\011\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003
\125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040
\156\166\055\163\141\061\050\060\046\006\003\125\004\003\023\037
```

\107\154\157\142\141\154\123\151\147\156\040\123\145\143\165\162
\145\040\115\141\151\154\040\122\157\157\164\040\105\064\065\060
\036\027\015\062\060\060\063\061\070\060\060\060\060\060\132
\027\015\064\065\060\063\061\070\060\060\060\060\060\132\060
\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031
\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123
\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125
\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123
\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040
\105\064\065\060\166\060\020\006\007\052\206\110\316\075\002\001
\006\005\053\201\004\000\042\003\142\000\004\371\171\213\201\107
\067\211\226\077\105\111\120\177\032\046\013\223\062\176\056\300
\300\247\010\232\303\156\217\233\076\013\042\354\067\123\267\157
\212\260\274\047\067\113\155\251\106\073\331\037\377\245\241\104
\273\055\163\277\236\101\007\134\123\233\121\010\072\132\273\157
\070\307\026\221\170\302\112\023\151\035\202\337\132\057\000\210
\226\242\056\034\164\371\235\176\146\067\212\243\102\060\100\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\337\023\136\213\137
\302\100\002\375\126\267\224\114\266\036\325\246\261\024\226\060
\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060\145
\002\060\023\260\276\327\161\040\076\344\253\234\316\066\022\175
\137\114\037\052\265\151\105\063\137\323\055\132\262\344\210\307
\336\012\066\102\062\171\235\246\153\272\341\371\104\052\173\212
\303\022\002\061\000\240\146\034\116\207\235\207\311\355\231\114
\033\012\356\055\140\303\067\307\035\315\265\162\260\331\306\357
\274\362\377\077\360\122\335\010\347\252\144\171\303\344\151\127
\221\057\244\313\174

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GlobalSign Secure Mail Root E45"

Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE

Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a

Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 18 00:00:00 2020

Not Valid After : Sat Mar 18 00:00:00 2045

Fingerprint (SHA-256):

5C:BF:6F:B8:1F:D4:17:EA:41:28:CD:6F:81:72:A3:C9:40:20:94:F7:4A:B2:ED:3A:06:B4:40:5D:04:F3:0B:19

Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Secure Mail Root E45"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\030\056\037\062\117\211\337\276\376\210\211\360\223\302\304\240
\053\147\165\041
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\374\306\056\237\364\122\055\052\250\244\272\373\147\062\377
END
CKA_ISSUER
MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\105\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270
\220\012
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GlobalSign Root R46"
#
# Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Serial Number: 11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1
# Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 20 00:00:00 2019
# Not
  Valid After : Tue Mar 20 00:00:00 2046
# Fingerprint (SHA-256):
4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9
# Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root R46"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154

```

\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\122\064\066

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\122\064\066

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320
\337\045\147\321

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\132\060\202\003\102\240\003\002\001\002\002\022\021
\322\273\271\327\043\030\236\100\137\012\235\055\320\337\045\147
\321\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\122\064\066\060\036\027\015\061\071\060\063
\062\060\060\060\060\060\060\060\132\027\015\064\066\060\063\062
\060\060\060\060\060\060\060\132\060\106\061\013\060\011\006\003
\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004\012
\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166\055
\163\141\061\034\060\032\006\003\125\004\003\023\023\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\122\064\066
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\254\254\164\062\350\263\145\345\272\355\103\046\035\246\211
\015\105\272\051\210\262\244\035\143\335\323\301\054\011\127\211
\071\241\125\351\147\064\167\014\156\344\125\035\122\045\322\023
\153\136\341\035\251\267\175\211\062\137\015\236\237\054\172\143
\140\100\037\246\260\266\170\217\231\124\226\010\130\256\344\006
\274\142\005\002\026\277\257\250\043\003\266\224\017\274\156\154
\302\313\325\246\273\014\351\366\301\002\373\041\336\146\335\027
\253\164\102\357\360\164\057\045\364\352\153\125\133\220\333\235
\337\136\207\012\100\373\255\031\153\373\367\312\140\210\336\332
\301\217\326\256\325\177\324\074\203\356\327\026\114\203\105\063
\153\047\320\206\320\034\055\153\363\253\175\361\205\251\365\050
\322\255\357\363\204\113\034\207\374\023\243\072\162\242\132\021
\053\326\047\161\047\355\201\055\155\146\201\222\207\264\033\130
\172\314\077\012\372\106\117\115\170\134\370\053\110\343\004\204

\313\135\366\264\152\263\145\374\102\236\121\046\043\040\313\075
\024\371\201\355\145\026\000\117\032\144\227\146\010\317\214\173
\343\053\300\235\371\024\362\033\361\126\152\026\277\054\205\205
\315\170\070\232\353\102\152\002\064\030\203\027\116\224\126\370
\266\202\265\363\226\335\075\363\276\177\040\167\076\173\031\043
\153\054\324\162\163\103\127\175\340\370\327\151\117\027\066\004
\371\300\220\140\067\105\336\346\014\330\164\215\256\234\242\155
\164\135\102\276\006\365\331\144\156\002\020\254\211\260\114\073
\007\115\100\176\044\305\212\230\202\171\216\244\247\202\040\215
\043\372\047\161\311\337\306\101\164\240\115\366\221\026\334\106
\214\137\051\143\061\131\161\014\330\157\302\266\062\175\373\346
\135\123\246\176\025\374\273\165\174\135\354\370\366\027\034\354
\307\153\031\313\363\173\360\053\007\245\331\154\171\124\166\154
\235\034\246\156\016\351\171\014\250\043\152\243\337\033\060\061
\237\261\124\173\376\152\313\146\252\334\145\320\242\236\112\232
\007\041\153\201\217\333\304\131\372\336\042\300\004\234\343\252
\133\066\223\350\075\275\172\241\235\013\166\261\013\307\235\375
\317\230\250\006\302\370\052\243\241\203\240\267\045\162\245\002
\343\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125
\035\016\004\026\004\024\003\134\253\163\201\207\250\314\260\246
\325\224\342\066\226\111\377\005\231\054\060\015\006\011\052\206
\110\206\367\015\001\001\014\005\000\003\202\002\001\000\174\170
\354\366\002\054\273\133\176\222\053\135\071\334\276\330\035\242
\102\063\115\371\357\244\052\073\104\151\036\254\331\105\243\116
\074\247\330\044\121\262\124\034\223\116\304\357\173\223\205\140
\046\352\011\110\340\365\273\307\351\150\322\273\152\061\161\314
\171\256\021\250\360\231\375\345\037\274\057\250\314\127\353\166
\304\041\246\107\123\125\115\150\277\005\244\356\327\046\253\142
\332\103\067\113\342\306\265\345\262\203\031\072\307\323\333\115
\236\010\172\363\356\317\076\142\373\254\350\140\314\321\307\241
\134\203\105\304\105\314\363\027\153\024\311\004\002\076\322\044
\246\171\351\036\316\242\347\301\131\025\237\035\342\113\232\076
\237\166\010\055\153\330\272\127\024\332\203\352\376\214\125\351
\320\116\251\314\167\061\261\104\021\172\134\261\076\323\024\105
\025\030\142\044\023\322\313\115\316\134\203\301\066\362\020\265
\016\210\155\270\341\126\237\211\336\226\146\071\107\144\054\156
\115\256\142\173\277\140\164\031\270\126\254\222\254\026\062\355
\255\150\125\376\230\272\323\064\336\364\311\141\303\016\206\366
\113\204\140\356\015\173\265\062\130\171\221\125\054\201\103\263
\164\037\172\252\045\236\035\327\241\213\271\315\102\056\004\244
\146\203\115\211\065\266\154\250\066\112\171\041\170\042\320\102
\274\321\100\061\220\241\276\004\317\312\147\355\365\360\200\323
\140\311\203\052\042\005\320\007\073\122\277\014\236\252\053\371
\273\346\037\217\045\272\205\215\027\036\002\376\135\120\004\127
\317\376\055\274\357\134\300\032\253\266\237\044\306\337\163\150
\110\220\054\024\364\077\122\032\344\322\313\024\303\141\151\317

```
\342\371\030\305\272\063\237\024\243\004\135\271\161\367\265\224
\330\366\063\301\132\301\064\213\174\233\335\223\072\347\023\242
\160\141\237\257\217\353\330\305\165\370\063\146\324\164\147\072
\067\167\234\347\335\244\017\166\103\146\212\103\362\237\373\014
\102\170\143\321\342\017\157\173\324\241\075\164\227\205\267\110
\071\101\326\040\374\320\072\263\372\350\157\304\212\272\161\067
\276\213\227\261\170\061\117\263\347\266\003\023\316\124\235\256
\045\131\314\177\065\137\010\367\100\105\061\170\052\172
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

#

Trust for "GlobalSign Root R46"

Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE

Serial Number:11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1

Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 20 00:00:00 2019

Not Valid After : Tue Mar 20 00:00:00 2046

Fingerprint (SHA-256):

4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9

Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Root R46"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\123\242\260\113\312\153\326\105\346\071\212\216\304\015\322\277
\167\303\242\220
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\304\024\060\344\372\146\103\224\052\152\033\044\137\031\320\357
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\122\064\066
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320
\337\045\147\321
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "GlobalSign Root E46"

#

Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE

Serial Number:11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43

Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 20 00:00:00 2019

Not Valid After : Tue Mar 20 00:00:00 2046

Fingerprint (SHA-256):

CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58

#

Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Root E46"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\022\021\322\273\272\063\156\324\274\346\044\150\305\015\204
\035\230\350\103

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\002\013\060\202\001\221\240\003\002\001\002\002\022\021
\322\273\272\063\156\324\274\346\044\150\305\015\204\035\230\350
\103\060\012\006\010\052\206\110\316\075\004\003\003\060\106\061
\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060\027

\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151\147
\156\040\156\166\055\163\141\061\034\060\032\006\003\125\004\003
\023\023\107\154\157\142\141\154\123\151\147\156\040\122\157\157
\164\040\105\064\066\060\036\027\015\061\071\060\063\062\060\060
\060\060\060\060\060\132\027\015\064\066\060\063\062\060\060\060
\060\060\060\060\132\060\106\061\013\060\011\006\003\125\004\006
\023\002\102\105\061\031\060\027\006\003\125\004\012\023\020\107
\154\157\142\141\154\123\151\147\156\040\156\166\055\163\141\061
\034\060\032\006\003\125\004\003\023\023\107\154\157\142\141\154
\123\151\147\156\040\122\157\157\164\040\105\064\066\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\234\016\261\317\267\350\236\122\167\165\064
\372\245\106\247\255\062\031\062\264\007\251\047\312\224\273\014
\322\012\020\307\332\211\260\227\014\160\023\011\001\216\330\352
\107\352\276\262\200\053\315\374\050\015\333\254\274\244\206\067
\355\160\010\000\165\352\223\013\173\056\122\234\043\150\043\006
\103\354\222\057\123\204\333\373\107\024\007\350\137\224\147\135
\311\172\201\074\040\243\102\060\100\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\061\012\220\217\266\306\235\322\104\113\200
\265\242\346\037\261\022\117\033\225\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\061\000\337\124\220
\355\233\357\213\224\002\223\027\202\231\276\263\236\054\366\013
\221\214\237\112\024\261\366\144\274\273\150\121\023\014\003\367
\025\213\204\140\271\213\377\122\216\347\214\274\034\002\060\074
\371\021\324\214\116\300\301\141\302\025\114\252\253\035\013\061
\137\073\034\342\000\227\104\061\346\376\163\226\057\332\226\323
\376\010\007\263\064\211\274\005\237\367\036\206\356\213\160

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GlobalSign Root E46"

Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE

Serial Number: 11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43

Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 20 00:00:00 2019

Not Valid After : Tue Mar 20 00:00:00 2046

Fingerprint (SHA-256):

CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58

Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL


```

CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root E46"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\071\264\154\325\376\200\006\353\342\057\112\273\010\063\240\257
\333\271\335\204
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\265\270\146\355\336\010\203\343\311\342\001\064\006\254\121\157
END
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\105\064\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\322\273\272\063\156\324\274\346\044\150\305\015\204
\035\230\350\103
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GLOBALTRUST
2020"
#
# Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
# Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5
# Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
# Not Valid Before: Mon Feb 10 00:00:00 2020
# Not Valid After : Sun Jun 10 00:00:00 2040
# Fingerprint (SHA-256):
9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A
# Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040

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\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\132\113\275\132\373\117\212\133\372\145\345
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\202\060\202\003\152\240\003\002\001\002\002\013\132
\113\275\132\373\117\212\133\372\145\345\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\060\115\061\013\060\011\006
\003\125\004\006\023\002\101\124\061\043\060\041\006\003\125\004
\012\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157
\156\151\164\157\162\151\156\147\040\107\155\142\110\061\031\060
\027\006\003\125\004\003\023\020\107\114\117\102\101\114\124\122
\125\123\124\040\062\060\062\060\060\060\060\036\027\015\062\060\060\062
\061\060\060\060\060\060\060\060\132\027\015\064\060\060\066\061
\060\060\060\060\060\060\060\132\060\115\061\013\060\011\006\003
\125\004\006\023\002\101\124\061\043\060\041\006\003\125\004\012
\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157\156
\151\164\157\162\151\156\147\040\107\155\142\110\061\031\060\027
\006\003\125\004\003\023\020\107\114\117\102\101\114\124\122\125
\123\124\040\062\060\062\060\060\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\256\056\126\255\033\034\357\366
\225\217\240\167\033\053\323\143\217\204\115\105\242\017\237\133
\105\253\131\173\121\064\371\354\213\212\170\305\335\153\257\275
\304\337\223\105\036\277\221\070\013\256\016\026\347\101\163\370
\333\273\321\270\121\340\313\203\073\163\070\156\167\212\017\131
\143\046\315\247\052\316\124\373\270\342\300\174\107\316\140\174
\077\262\163\362\300\031\266\212\222\207\065\015\220\050\242\344
\025\004\143\076\272\257\356\174\136\314\246\213\120\262\070\367
\101\143\312\316\377\151\217\150\016\225\066\345\314\271\214\011
\312\113\335\061\220\226\310\314\037\375\126\226\064\333\216\034
\352\054\276\205\056\143\335\252\251\225\323\375\051\225\023\360
\310\230\223\331\055\026\107\220\021\203\242\072\042\242\050\127
\242\353\376\300\214\050\240\246\175\347\052\102\073\202\200\143
\245\143\037\031\314\174\262\146\250\302\323\155\067\157\342\176
\006\121\331\105\204\037\022\316\044\122\144\205\013\110\200\116
\207\261\042\042\060\252\353\256\276\340\002\340\100\350\260\102
```

\200\003\121\252\264\176\252\104\327\103\141\363\242\153\026\211
\111\244\243\244\053\212\002\304\170\364\150\212\301\344\172\066
\261\157\033\226\033\167\111\215\324\311\006\162\217\317\123\343
\334\027\205\040\112\334\230\047\323\221\046\053\107\036\151\007
\257\336\242\344\344\324\153\013\263\136\174\324\044\200\107\051
\151\073\156\350\254\375\100\353\330\355\161\161\053\362\350\130
\035\353\101\227\042\305\037\324\071\320\047\217\207\343\030\364
\340\251\106\015\365\164\072\202\056\320\156\054\221\243\061\134
\073\106\352\173\004\020\126\136\200\035\365\245\145\350\202\374
\342\007\214\142\105\365\040\336\106\160\206\241\274\223\323\036
\164\246\154\260\054\367\003\014\210\014\313\324\162\123\206\274
\140\106\363\230\152\302\361\277\103\371\160\040\167\312\067\101
\171\125\122\143\215\133\022\237\305\150\304\210\235\254\362\060
\253\267\243\061\227\147\255\217\027\017\154\307\163\355\044\224
\153\310\203\232\320\232\067\111\004\253\261\026\310\154\111\111
\055\253\241\320\214\222\362\101\112\171\041\045\333\143\327\266
\234\247\176\102\151\373\072\143\002\003\001\000\001\243\143\060
\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\035\006\003\125\035\016\004\026\004\024\334\056\037
\321\141\067\171\344\253\325\325\263\022\161\150\075\152\150\234
\042\060\037\006\003\125\035\043\004\030\060\026\200\024\334\056
\037\321\141\067\171\344\253\325\325\263\022\161\150\075\152\150
\234\042\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\003\202\002\001\000\221\360\102\002\150\100\356\303\150\300
\124\057\337\354\142\303\303\236\212\240\061\050\252\203\216\244
\126\226\022\020\206\126\272\227\162\322\124\060\174\255\031\325
\035\150\157\373\024\102\330\215\016\363\265\321\245\343\002\102
\136\334\350\106\130\007\065\002\060\340\274\164\112\301\103\052
\377\333\032\320\260\257\154\303\375\313\263\365\177\155\003\056
\131\126\235\055\055\065\214\262\326\103\027\054\222\012\313\135
\350\214\017\113\160\103\320\202\377\250\314\277\244\224\300\276
\207\275\212\343\223\173\306\217\233\026\235\047\145\274\172\305
\102\202\154\134\007\320\251\301\210\140\104\351\230\205\026\137
\370\217\312\001\020\316\045\303\371\140\033\240\305\227\303\323
\054\210\061\242\275\060\354\320\320\300\022\361\301\071\343\345
\365\370\326\112\335\064\315\373\157\301\117\343\000\213\126\342
\222\367\050\262\102\167\162\043\147\307\077\021\025\262\304\003
\005\276\273\021\173\012\277\250\156\347\377\130\103\317\233\147
\240\200\007\266\035\312\255\155\352\101\021\176\055\164\223\373
\302\274\276\121\104\305\357\150\045\047\200\343\310\240\324\022
\354\331\245\067\035\067\174\264\221\312\332\324\261\226\201\357
\150\134\166\020\111\257\176\245\067\200\261\034\122\275\063\201
\114\217\371\335\145\331\024\315\212\045\130\364\342\305\203\245
\011\220\324\154\024\143\265\100\337\353\300\374\304\130\176\015
\024\026\207\124\047\156\126\344\160\204\270\154\062\022\176\202
\061\103\276\327\335\174\241\255\256\326\253\040\022\357\012\303
\020\214\111\226\065\334\013\165\136\261\117\325\117\064\016\021

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\040\007\165\103\105\351\243\021\332\254\243\231\302\266\171\047
\342\271\357\310\342\366\065\051\172\164\372\305\177\202\005\142
\246\012\352\150\262\171\107\006\156\362\127\250\025\063\306\367
\170\112\075\102\173\153\176\376\367\106\352\321\353\216\357\210
\150\133\350\301\331\161\176\375\144\357\377\147\107\210\130\045
\057\076\206\007\275\373\250\345\202\250\254\245\323\151\103\315
\061\210\111\204\123\222\300\261\071\033\071\203\001\060\304\362
\251\372\320\003\275\162\067\140\126\037\066\174\275\071\221\365
\155\015\277\173\327\222
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GLOBALTRUST 2020"

Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT

Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5

Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT

Not Valid Before: Mon Feb 10 00:00:00 2020

Not Valid After : Sun Jun 10 00:00:00 2040

Fingerprint (SHA-256):

9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A

Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GLOBALTRUST 2020"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\320\147\301\023\121\001\014\252\320\307\152\145\067\061\026\046
\117\123\161\242
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\212\307\157\313\155\343\314\242\361\174\203\372\016\170\327\350
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\013\132\113\275\132\373\117\212\133\372\145\345
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "ANF

Secure Server Root CA"

#

Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510

Serial Number:0d:d3:e3:bc:6c:f9:6b:b1

Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510

Not Valid Before: Wed Sep 04 10:00:38 2019

Not Valid After : Tue Aug 30 10:00:38 2039

Fingerprint (SHA-256):

FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99

Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ANF Secure Server Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\010\015\323\343\274\154\371\153\261

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\357\060\202\003\327\240\003\002\001\002\002\010\015
\323\343\274\154\371\153\261\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\204\061\022\060\020\006\003\125
\004\005\023\011\107\066\063\062\070\067\065\061\060\061\013\060
\011\006\003\125\004\006\023\002\105\123\061\047\060\045\006\003
\125\004\012\023\036\101\116\106\040\101\165\164\157\162\151\144
\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143
\151\157\156\061\024\060\022\006\003\125\004\013\023\013\101\116
\106\040\103\101\040\122\141\151\172\061\042\060\040\006\003\125
\004\003\023\031\101\116\106\040\123\145\143\165\162\145\040\123
\145\162\166\145\162\040\122\157\157\164\040\103\101\060\036\027
\015\061\071\060\071\060\064\061\060\060\060\063\070\132\027\015
\063\071\060\070\063\060\061\060\060\060\063\070\132\060\201\204
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070
\067\065\061\060\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\047\060\045\006\003\125\004\012\023\036\101\116\106\040
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\156\061\024\060\022\006\003
\125\004\013\023\013\101\116\106\040\103\101\040\122\141\151\172
\061\042\060\040\006\003\125\004\003\023\031\101\116\106\040\123
\145\143\165\162\145\040\123\145\162\166\145\162\040\122\157\157
\164\040\103\101\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\333\353\153\053\346\144\124\225\202\220\243
\162\244\031\001\235\234\013\201\137\163\111\272\247\254\363\004
\116\173\226\013\354\021\340\133\246\034\316\033\322\015\203\034
\053\270\236\035\176\105\062\140\017\007\351\167\130\176\237\152
\310\141\116\266\046\301\114\215\377\114\357\064\262\037\145\330
\271\170\365\255\251\161\271\357\117\130\035\245\336\164\040\227
\241\355\150\114\336\222\027\113\274\253\377\145\232\236\373\107
\331\127\162\363\011\241\256\166\104\023\156\234\055\104\071\274
\371\307\073\244\130\075\101\275\264\302\111\243\310\015\322\227
\057\007\145\122\000\247\156\310\257\150\354\364\024\226\266\127
\037\126\303\071\237\053\155\344\363\076\366\065\144\332\014\034
\241\204\113\057\113\113\342\054\044\235\155\223\100\353\265\043
\216\062\312\157\105\323\250\211\173\036\317\036\372\133\103\213
\315\315\250\017\152\312\014\136\271\236\107\217\360\331\266\012
\013\130\145\027\063\271\043\344\167\031\175\313\112\056\222\173
\117\057\020\167\261\215\057\150\234\142\314\340\120\370\354\221
\247\124\114\127\011\325\166\143\305\350\145\036\356\155\152\317
\011\235\372\174\117\255\140\010\375\126\231\017\025\054\173\251
\200\253\214\141\217\112\007\166\102\336\075\364\335\262\044\063
\133\270\265\243\104\311\254\177\167\074\035\043\354\202\251\246

\342\310\006\114\002\376\254\134\231\231\013\057\020\212\246\364
\177\325\207\164\015\131\111\105\366\360\161\134\071\051\326\277
\112\043\213\365\137\001\143\322\207\163\050\265\113\012\365\370
\253\202\054\176\163\045\062\035\013\143\012\027\201\000\377\266
\166\136\347\264\261\100\312\041\273\325\200\121\345\110\122\147
\054\322\141\211\007\015\017\316\102\167\300\104\163\234\104\120
\240\333\020\012\055\225\034\201\257\344\034\345\024\036\361\066
\101\001\002\057\175\163\247\336\102\314\114\351\211\015\126\367
\237\221\324\003\306\154\311\217\333\330\034\340\100\230\135\146
\231\230\200\156\055\377\001\305\316\313\106\037\254\002\306\103
\346\256\242\204\074\305\116\036\075\155\311\024\114\343\056\101
\273\312\071\277\066\074\052\031\252\101\207\116\245\316\113\062
\171\335\220\111\177\002\003\001\000\001\243\143\060\141\060\037
\006\003\125\035\043\004\030\060\026\200\024\234\137\320\154\143
\243\137\223\312\223\230\010\255\214\207\245\054\134\301\067\060
\035\006\003\125\035\016\004\026\004\024\234\137\320\154\143\243
\137\223\312\223\230\010\255\214\207\245\054\134\301\067\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202
\002\001\000\116\036\271\212\306\240\230\077\156\303\151\300\152
\134\111\122\254\313\053\135\170\070\301\325\124\204\237\223\360
\207\031\075\054\146\211\353\015\102\374\314\360\165\205\077\213
\364\200\135\171\345\027\147\275\065\202\342\362\074\216\175\133
\066\313\132\200\000\051\362\316\053\054\361\217\252\155\005\223
\154\162\307\126\353\337\120\043\050\345\105\020\075\350\147\243
\257\016\125\017\220\011\142\357\113\131\242\366\123\361\300\065
\344\057\301\044\275\171\057\116\040\042\073\375\032\040\260\244
\016\054\160\355\164\077\270\023\225\006\121\310\350\207\046\312
\244\133\152\026\041\222\335\163\140\236\020\030\336\074\201\352
\350\030\303\174\211\362\213\120\076\275\021\342\025\003\250\066
\175\063\001\154\110\025\327\210\220\231\004\305\314\346\007\364
\274\364\220\355\023\342\352\213\303\217\243\063\017\301\051\114
\023\116\332\025\126\161\163\162\202\120\366\232\063\174\242\261
\250\032\064\164\145\134\316\321\353\253\123\340\032\200\330\352
\072\111\344\046\060\233\345\034\212\250\251\025\062\206\231\222
\012\020\043\126\022\340\366\316\114\342\273\276\333\215\222\163
\001\146\057\142\076\262\162\047\105\066\355\115\126\343\227\231
\377\072\065\076\245\124\112\122\131\113\140\333\356\376\170\021
\177\112\334\024\171\140\266\153\144\003\333\025\203\341\242\276
\366\043\227\120\360\011\063\066\247\161\226\045\363\271\102\175
\333\070\077\054\130\254\350\102\341\016\330\323\073\114\056\202
\351\203\056\153\061\331\335\107\206\117\155\227\221\056\117\342
\050\161\065\026\321\362\163\376\045\053\007\107\044\143\047\310
\370\366\331\153\374\022\061\126\010\300\123\102\257\234\320\063
\176\374\006\360\061\104\003\024\361\130\352\362\152\015\251\021
\262\203\276\305\032\277\007\352\131\334\243\210\065\357\234\166
\062\074\115\006\042\316\025\345\335\236\330\217\332\336\322\304

```
\071\345\027\201\317\070\107\353\177\210\155\131\033\337\237\102
\024\256\176\317\250\260\146\145\332\067\257\237\252\075\352\050
\266\336\325\061\130\026\202\133\352\273\031\165\002\163\032\312
\110\032\041\223\220\012\216\223\204\247\175\073\043\030\222\211
\240\215\254
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "ANF Secure Server Root CA"

Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510

Serial Number:0d:d3:e3:bc:6c:f9:6b:b1

Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion,C=ES,serialNumber=G63287510

Not Valid Before: Wed Sep 04 10:00:38 2019

Not Valid After : Tue Aug 30 10:00:38 2039

Fingerprint (SHA-256):

FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99

Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ANF Secure Server Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\133\156\150\320\314\025\266\240\137\036\301\137\256\002\374\153
\057\135\157\164
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\046\246\104\132\331\257\116\057\262\035\266\145\260\116\350\226
END
```

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040
\122\157\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER


```
MULTILINE_OCTAL
\002\010\015\323\343\274\154\371\153\261
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certum EC-384 CA"
#
# Issuer: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4
# Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Not Valid Before: Mon Mar 26 07:24:54 2018
# Not Valid After : Thu Mar 26 07:24:54 2043
# Fingerprint (SHA-256):
6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6
# Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum EC-384 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_SERIAL_NUMBER
```

MULTILINE_OCTAL

\002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272
\163\364

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\145\060\202\001\353\240\003\002\001\002\002\020\170
\217\047\134\201\022\122\040\245\004\320\055\335\272\163\364\060
\012\006\010\052\206\110\316\075\004\003\003\060\164\061\013\060
\011\006\003\125\004\006\023\002\120\114\061\041\060\037\006\003
\125\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141
\040\123\171\163\164\145\155\163\040\123\056\101\056\061\047\060
\045\006\003\125\004\013\023\036\103\145\162\164\165\155\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\061\031\060\027\006\003\125\004\003\023
\020\103\145\162\164\165\155\040\105\103\055\063\070\064\040\103
\101\060\036\027\015\061\070\060\063\062\066\060\067\062\064\065
\064\132\027\015\064\063\060\063\062\066\060\067\062\064\065\064
\132\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114
\061\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143
\157\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027
\006\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103
\055\063\070\064\040\103\101\060\166\060\020\006\007\052\206\110
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\304
\050\216\253\030\133\152\276\156\144\067\143\344\315\354\253\072
\367\314\241\270\016\202\111\327\206\051\237\241\224\362\343\140
\170\230\201\170\006\115\362\354\232\016\127\140\203\237\264\346
\027\057\032\263\135\002\133\211\043\074\302\021\005\052\247\210
\023\030\363\120\204\327\275\064\054\047\211\125\377\316\114\347
\337\246\037\050\304\360\124\303\271\174\267\123\255\353\302\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\215
\006\146\164\044\166\072\363\211\367\274\326\275\107\175\057\274
\020\137\113\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003
\150\000\060\145\002\060\003\125\055\246\346\030\304\174\357\311
\120\156\301\047\017\234\207\257\156\325\033\010\030\275\222\051
\301\357\224\221\170\322\072\034\125\211\142\345\033\011\036\272
\144\153\361\166\264\324\002\061\000\264\102\204\231\377\253\347
\236\373\221\227\047\135\334\260\133\060\161\316\136\070\032\152
\331\045\347\352\367\141\222\126\370\352\332\066\302\207\145\226
\056\162\045\057\177\337\303\023\311

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Certum EC-384 CA"

Issuer: CN=Certum EC-384

CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4

Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

Not Valid Before: Mon Mar 26 07:24:54 2018

Not Valid After : Thu Mar 26 07:24:54 2043

Fingerprint (SHA-256):

6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6

Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certum EC-384 CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\363\076\170\074\254\337\364\242\314\254\147\125\151\126\327\345

\026\074\341\355

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\266\145\263\226\140\227\022\241\354\116\341\075\243\306\311\361

END

CKA_ISSUER MULTILINE_OCTAL

\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061

\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157

\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056

\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162

\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157

\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006

\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055

\063\070\064\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272

\163\364

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "Certum Trusted Root CA"

#

Issuer: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

```
# Serial Number:1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed
# Subject: CN=Certum Trusted Root
CA,OU=Certum Certification Authority,O=Asesco Data Systems S.A.,C=PL
# Not Valid Before: Fri Mar 16 12:10:13 2018
# Not Valid After : Mon Mar 16 12:10:13 2043
# Fingerprint (SHA-256):
FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD
# Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Trusted Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117
\265\355
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\300\060\202\003\250\240\003\002\001\002\002\020\036
\277\131\120\270\311\200\067\114\006\367\353\125\117\265\355\060
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060\172
\061\013\060\011\006\003\125\004\006\023\002\120\114\061\041\060
\037\006\003\125\004\012\023\030\101\163\163\145\143\157\040\104
\141\164\141\040\123\171\163\164\145\155\163\040\123\056\101\056
\061\047\060\045\006\003\125\004\013\023\036\103\145\162\164\165
```

\155\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\061\037\060\035\006\003\125
\004\003\023\026\103\145\162\164\165\155\040\124\162\165\163\164
\145\144\040\122\157\157\164\040\103\101\060\036\027\015\061\070
\060\063\061\066\061\062\061\060\061\063\132\027\015\064\063\060
\063\061\066\061\062\061\060\061\063\132\060\172\061\013\060\011
\006\003\125\004\006\023\002\120\114\061\041\060\037\006\003\125
\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141\040
\123\171\163\164\145\155\163\040\123\056\101\056\061\047\060\045
\006\003\125\004\013\023\036\103\145\162\164\165\155\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\061\037\060\035\006\003\125\004\003\023\026
\103\145\162\164\165\155\040\124\162\165\163\164\145\144\040\122
\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\321\055\216\273\267\066\352\155\067
\221\237\116\223\247\005\344\051\003\045\316\034\202\367\174\231
\237\101\006\315\355\243\272\300\333\011\054\301\174\337\051\176
\113\145\057\223\247\324\001\153\003\050\030\243\330\235\005\301
\052\330\105\361\221\336\337\073\320\200\002\214\317\070\017\352
\247\134\170\021\244\301\310\205\134\045\323\323\262\347\045\317
\021\124\227\253\065\300\036\166\034\357\000\123\237\071\334\024
\245\054\042\045\263\162\162\374\215\263\345\076\010\036\024\052
\067\013\210\074\312\260\364\310\302\241\256\274\301\276\051\147
\125\342\374\255\131\134\376\275\127\054\260\220\215\302\355\067
\266\174\231\210\265\325\003\232\075\025\015\075\072\250\250\105
\360\225\116\045\131\035\315\230\151\273\323\314\062\311\215\357
\201\376\255\175\211\273\272\140\023\312\145\225\147\240\363\031
\366\003\126\324\152\323\047\342\241\255\203\360\112\022\042\167
\034\005\163\342\031\161\102\300\354\165\106\232\220\130\340\152
\216\053\245\106\060\004\216\031\262\027\343\276\251\272\177\126
\361\044\003\327\262\041\050\166\016\066\060\114\171\325\101\232
\232\250\270\065\272\014\072\362\104\033\040\210\367\305\045\327
\075\306\343\076\103\335\207\376\304\352\365\123\076\114\145\377
\073\112\313\170\132\153\027\137\015\307\303\117\116\232\052\242
\355\127\115\042\342\106\232\077\017\221\064\044\175\125\343\214
\225\067\323\032\360\011\053\054\322\311\215\264\015\000\253\147
\051\050\330\001\365\031\004\266\035\276\166\376\162\134\304\205
\312\322\200\101\337\005\250\243\325\204\220\117\013\363\340\077
\233\031\322\067\211\077\362\173\122\034\214\366\341\367\074\007
\227\214\016\242\131\201\014\262\220\075\323\343\131\106\355\017
\251\247\336\200\153\132\252\007\266\031\313\274\127\363\227\041
\172\014\261\053\164\076\353\332\247\147\055\114\304\230\236\066
\011\166\146\146\374\032\077\352\110\124\034\276\060\275\200\120
\277\174\265\316\000\366\014\141\331\347\044\003\340\343\001\201
\016\275\330\205\064\210\275\262\066\250\173\134\010\345\104\200
\214\157\370\057\325\041\312\035\034\320\373\304\265\207\321\072
\116\307\166\265\065\110\265\002\003\001\000\001\243\102\060\100

\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\035\006\003\125\035\016\004\026\004\024\214\373\034\165
\274\002\323\237\116\056\110\331\371\140\124\252\304\263\117\372
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000\003
\202\002\001\000\110\242\325\000\013\056\320\077\274\034\325\265
\124\111\036\132\153\364\344\362\340\100\067\340\314\024\173\271
\311\372\065\265\165\027\223\152\005\151\205\234\315\117\031\170
\133\031\201\363\143\076\303\316\133\217\365\057\136\001\166\023
\077\054\000\271\315\226\122\071\111\155\004\116\305\351\017\206
\015\341\372\263\137\202\022\361\072\316\146\006\044\064\053\350
\314\312\347\151\334\207\235\302\064\327\171\321\323\167\270\252
\131\130\376\235\046\372\070\206\076\235\212\207\144\127\345\027
\072\342\371\215\271\343\063\170\301\220\330\270\335\267\203\121
\344\304\314\043\325\006\174\346\121\323\315\064\061\300\366\106
\273\013\255\374\075\020\005\052\073\112\221\045\356\214\324\204
\207\200\052\274\011\214\252\072\023\137\350\064\171\120\301\020
\031\371\323\050\036\324\321\121\060\051\263\256\220\147\326\037
\012\143\261\305\251\306\102\061\143\027\224\357\151\313\057\372
\214\024\175\304\103\030\211\331\360\062\100\346\200\342\106\137
\345\343\301\000\131\250\371\350\040\274\211\054\016\107\064\013
\352\127\302\123\066\374\247\324\257\061\315\376\002\345\165\372
\271\047\011\371\363\365\073\312\175\237\251\042\313\210\311\252
\321\107\075\066\167\250\131\144\153\047\317\357\047\301\343\044
\265\206\367\256\176\062\115\260\171\150\321\071\350\220\130\303
\203\274\017\054\326\227\353\316\014\341\040\307\332\267\076\303
\077\277\057\334\064\244\373\053\041\315\147\217\113\364\343\352
\324\077\347\117\272\271\245\223\105\034\146\037\041\372\144\136
\157\340\166\224\062\313\165\365\156\345\366\217\307\270\244\314
\250\226\175\144\373\044\132\112\003\154\153\070\306\350\003\103
\232\367\127\271\263\051\151\223\070\364\003\362\273\373\202\153
\007\040\321\122\037\232\144\002\173\230\146\333\134\115\132\017
\320\204\225\240\074\024\103\006\312\312\333\270\101\066\332\152
\104\147\207\257\257\343\105\021\025\151\010\262\276\026\071\227
\044\157\022\105\321\147\135\011\250\311\025\332\372\322\246\137
\023\141\037\277\205\254\264\255\255\005\224\010\203\036\165\027
\323\161\073\223\120\043\131\240\355\074\221\124\235\166\000\305
\303\270\070\333

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Certum Trusted Root CA"

Issuer: CN=Certum

Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

Serial Number: 1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed

```
# Subject: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Not Valid Before: Fri Mar 16 12:10:13 2018
# Not Valid After : Mon Mar 16 12:10:13 2043
# Fingerprint (SHA-256):
FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD
# Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Trusted Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\310\203\104\300\030\256\237\314\361\207\267\217\042\321\305\327
\105\204\272\345
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\121\341\302\347\376\114\204\257\131\016\057\364\124\157\352\051
END
CKA_ISSUER MULTILINE_OCTAL
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117
\265\355
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "TunTrust Root CA"
#
# Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN
# Serial Number:13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13
#
# Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN
# Not Valid Before: Fri Apr 26 08:57:56 2019
# Not Valid After : Tue Apr 26 08:57:56 2044
# Fingerprint (SHA-256):
```

2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41

Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "TunTrust Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164
\040\103\101

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164
\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273
\273\262\153\076\374\023

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\263\060\202\003\233\240\003\002\001\002\002\024\023
\002\325\342\100\114\222\106\206\026\147\135\264\273\273\262\153
\076\374\023\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\141\061\013\060\011\006\003\125\004\006\023\002\124
\116\061\067\060\065\006\003\125\004\012\014\056\101\147\145\156
\143\145\040\116\141\164\151\157\156\141\154\145\040\144\145\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\105\154
\145\143\164\162\157\156\151\161\165\145\061\031\060\027\006\003
\125\004\003\014\020\124\165\156\124\162\165\163\164\040\122\157
\157\164\040\103\101\060\036\027\015\061\071\060\064\062\066\060
\070\065\067\065\066\132\027\015\064\064\060\064\062\066\060\070
\065\067\065\066\132\060\141\061\013\060\011\006\003\125\004\006
\023\002\124\116\061\067\060\065\006\003\125\004\012\014\056\101
\147\145\156\143\145\040\116\141\164\151\157\156\141\154\145\040
\144\145\040\103\145\162\164\151\146\151\143\141\164\151\157\156

\040\105\154\145\143\164\162\157\156\151\161\165\145\061\031\060
\027\006\003\125\004\003\014\020\124\165\156\124\162\165\163\164
\040\122\157\157\164\040\103\101\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\303\315\323\374\275\004\123
\335\014\040\072\325\210\056\005\113\101\365\203\202\176\367\131
\237\236\236\143\350\163\332\366\006\251\117\037\264\371\013\037
\071\214\232\040\320\176\006\324\354\064\331\206\274\165\133\207
\210\360\322\331\324\243\012\262\154\033\353\111\054\076\254\135
\330\224\003\240\354\064\345\060\304\065\175\373\046\115\033\156
\060\124\330\365\200\105\234\071\255\234\311\045\004\115\232\220
\076\116\100\156\212\153\315\051\147\306\314\055\340\164\350\005
\127\012\110\120\372\172\103\332\176\354\133\232\016\142\166\376
\352\235\035\205\162\354\021\273\065\350\037\047\277\301\241\307
\273\110\026\335\126\327\314\116\240\341\271\254\333\325\203\031
\032\205\321\224\227\327\312\243\145\013\363\070\371\002\256\335
\366\147\317\311\077\365\212\054\107\032\231\157\005\015\375\320
\035\202\061\374\051\314\000\130\227\221\114\200\000\034\063\205
\226\057\313\101\302\213\020\204\303\011\044\211\037\265\017\331
\331\167\107\030\222\224\140\134\307\231\003\074\376\367\225\247
\175\120\241\200\302\251\203\255\130\226\125\041\333\206\131\324
\257\306\274\335\201\156\007\333\140\142\376\354\020\156\332\150
\001\364\203\033\251\076\242\133\043\327\144\306\337\334\242\175
\330\113\272\202\322\121\370\146\277\006\106\344\171\052\046\066
\171\217\037\116\231\035\262\217\014\016\034\377\311\135\300\375
\220\020\246\261\067\363\315\072\044\156\264\205\220\277\200\271
\014\214\325\233\326\310\361\126\077\032\200\211\172\251\342\033
\062\121\054\076\362\337\173\366\135\172\051\031\216\345\310\275
\066\161\213\135\114\302\035\077\255\130\242\317\075\160\115\246
\120\230\045\334\043\371\270\130\101\010\161\277\117\270\204\240
\217\000\124\025\374\221\155\130\247\226\073\353\113\226\047\315
\153\242\241\206\254\015\174\124\346\146\114\146\137\220\276\041
\232\002\106\055\344\203\302\200\271\317\113\076\350\177\074\001
\354\217\136\315\177\322\050\102\001\225\212\342\227\075\020\041
\175\366\235\034\305\064\241\354\054\016\012\122\054\022\125\160
\044\075\313\302\024\065\103\135\047\116\276\300\275\252\174\226
\347\374\236\141\255\104\323\000\227\002\003\001\000\001\243\143
\060\141\060\035\006\003\125\035\016\004\026\004\024\006\232\233
\037\123\175\361\365\244\310\323\206\076\241\163\131\264\367\104
\041\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\006
\232\233\037\123\175\361\365\244\310\323\206\076\241\163\131\264
\367\104\041\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\002\001\000\252\005\156\266\335\025\311\277\263
\306\040\366\006\107\260\206\223\045\323\215\271\310\000\077\227
\365\122\047\210\161\311\164\375\353\312\144\333\133\357\036\135
\272\277\321\353\356\134\151\272\026\310\363\271\217\323\066\056

\100\111\007\015\131\336\213\020\260\111\005\342\377\221\077\113
\267\335\002\216\370\201\050\134\314\334\155\257\137\024\234\175
\130\170\015\366\200\011\271\351\016\227\051\031\270\267\353\370
\026\313\125\022\344\306\175\273\304\354\370\265\034\116\076\147
\277\305\137\033\155\155\107\050\252\004\130\141\326\166\277\042
\177\320\007\152\247\144\123\360\227\215\235\200\077\273\301\007
\333\145\257\346\233\062\232\303\124\223\304\034\010\303\104\373
\173\143\021\103\321\152\032\141\152\171\155\220\117\051\216\107
\005\301\022\151\151\326\306\066\061\341\374\372\200\272\134\117
\304\353\267\062\254\370\165\141\027\327\020\031\271\361\322\011
\357\172\102\235\133\132\013\324\306\225\116\052\316\377\007\327
\117\176\030\006\210\361\031\265\331\230\273\256\161\304\034\347
\164\131\130\357\014\211\317\213\037\165\223\032\004\024\222\110
\120\251\353\127\051\000\026\343\066\034\310\370\277\360\063\325
\101\017\304\314\074\335\351\063\103\001\221\020\053\036\321\271
\135\315\062\031\213\217\214\040\167\327\042\304\102\334\204\026
\233\045\155\350\264\125\161\177\260\174\263\323\161\111\271\317
\122\244\004\077\334\075\240\273\257\063\236\012\060\140\216\333
\235\135\224\250\275\140\347\142\200\166\201\203\014\214\314\060
\106\111\342\014\322\250\257\353\141\161\357\347\042\142\251\367
\134\144\154\237\026\214\147\066\047\105\365\011\173\277\366\020
\012\361\260\215\124\103\214\004\272\243\077\357\342\065\307\371
\164\340\157\064\101\320\277\163\145\127\040\371\233\147\172\146
\150\044\116\200\145\275\020\231\006\131\362\145\257\270\306\107
\273\375\220\170\213\101\163\056\257\125\037\334\073\222\162\156
\204\323\320\141\114\015\314\166\127\342\055\205\042\025\066\015
\353\001\235\353\330\353\304\204\231\373\300\014\314\062\350\343
\167\332\203\104\213\236\125\050\300\213\130\323\220\076\116\033
\000\361\025\255\203\053\232

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "TunTrust Root CA"

Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

Serial Number: 13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13

Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

#

Not Valid Before: Fri Apr 26 08:57:56 2019

Not Valid After : Tue Apr 26 08:57:56 2044

Fingerprint (SHA-256):

2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41

Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TunTrust Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\317\351\160\204\017\340\163\017\235\366\014\177\054\113\356\040
\106\064\234\273
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\205\023\271\220\133\066\134\266\136\270\132\370\340\061\127\264
END
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004
\003\014\020\124\165\156\124\162\165\163\164\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273
\273\262\153\076\374\023
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "HARICA TLS RSA Root CA 2021"
#
# Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e
# Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 10:55:38 2021
# Not Valid After : Mon Feb 13 10:55:37 2045
# Fingerprint (SHA-256):
D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D
# Fingerprint
(SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA TLS RSA Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061

```

\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123
\101\040\122\157\157\164\040\103\101\040\062\060\062\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123
\101\040\122\157\157\164\040\103\101\040\062\060\062\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211
\070\176

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\244\060\202\003\214\240\003\002\001\002\002\020\071
\312\223\034\357\103\363\306\216\223\307\364\144\211\070\176\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\154
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151
\157\156\163\040\103\101\061\044\060\042\006\003\125\004\003\014
\033\110\101\122\111\103\101\040\124\114\123\040\122\123\101\040
\122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015
\062\061\060\062\061\071\061\060\065\065\063\070\132\027\015\064
\065\060\062\061\063\061\060\065\065\063\067\132\060\154\061\013
\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006
\003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101
\143\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145
\141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156
\163\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110
\101\122\111\103\101\040\124\114\123\040\122\123\101\040\122\157
\157\164\040\103\101\040\062\060\062\061\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\213\302\347\257\145
\233\005\147\226\311\015\044\271\320\016\144\374\316\342\044\030
\054\204\177\167\121\313\004\021\066\270\136\355\151\161\247\236
\344\045\011\227\147\301\107\302\317\221\026\066\142\075\070\004
\341\121\202\377\254\322\264\151\335\056\354\021\243\105\356\153

\153\073\114\277\214\215\244\036\235\021\271\351\070\371\172\016
\014\230\342\043\035\321\116\143\324\347\270\101\104\373\153\257
\153\332\037\323\305\221\210\133\244\211\222\321\201\346\214\071
\130\240\326\151\103\251\255\230\122\130\156\333\012\373\153\317
\150\372\343\244\136\072\105\163\230\007\352\137\002\162\336\014
\245\263\237\256\251\035\267\035\263\374\212\131\347\156\162\145
\255\365\060\224\043\007\363\202\026\113\065\230\234\123\273\057
\312\344\132\331\307\215\035\374\230\231\373\054\244\202\153\360
\052\037\216\013\137\161\134\134\256\102\173\051\211\201\313\003
\243\231\312\210\236\013\100\011\101\063\333\346\130\172\375\256
\231\160\300\132\017\326\023\206\161\057\166\151\374\220\335\333
\055\156\321\362\233\365\032\153\236\157\025\214\172\360\113\050
\240\042\070\200\044\154\066\244\073\362\060\221\363\170\023\317
\301\077\065\253\361\035\021\043\265\103\042\236\001\222\267\030
\002\345\021\321\202\333\025\000\314\141\067\301\052\174\232\341
\320\272\263\120\106\356\202\254\235\061\370\373\043\342\003\000
\110\160\243\011\046\171\025\123\140\363\070\134\255\070\352\201
\000\143\024\271\063\136\335\013\333\240\105\007\032\063\011\370
\115\264\247\002\246\151\364\302\131\005\210\145\205\126\256\113
\313\340\336\074\175\055\032\310\351\373\037\243\141\112\326\052
\023\255\167\114\032\030\233\221\017\130\330\006\124\305\227\370
\252\077\040\212\246\205\246\167\366\246\374\034\342\356\156\224
\063\052\203\120\204\012\345\117\206\370\120\105\170\000\201\353
\133\150\343\046\215\314\173\134\121\364\024\054\100\276\032\140
\035\172\162\141\035\037\143\055\210\252\316\242\105\220\010\374
\153\276\263\120\052\132\375\250\110\030\106\326\220\100\222\220
\012\204\136\150\061\370\353\355\015\323\035\306\175\231\030\125
\126\047\145\056\215\105\305\044\354\316\343\002\003\001\000\001
\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024
\012\110\043\246\140\244\222\012\063\352\223\133\305\127\352\045
\115\275\022\356\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\002\001\000\076\220\110\252\156\142\025\045
\146\173\014\325\214\213\211\235\327\355\116\007\357\234\320\024
\137\136\120\275\150\226\220\244\024\021\252\150\155\011\065\071
\100\011\332\364\011\054\064\245\173\131\204\111\051\227\164\310
\007\036\107\155\362\316\034\120\046\343\236\075\100\123\077\367
\177\226\166\020\305\106\245\320\040\113\120\364\065\073\030\364
\125\152\101\033\107\006\150\074\273\011\010\142\331\137\125\102
\252\254\123\205\254\225\126\066\126\253\344\005\214\305\250\332
\037\243\151\275\123\017\304\377\334\312\343\176\362\114\210\206
\107\106\032\363\000\365\200\221\242\334\103\102\224\233\040\360
\321\315\262\353\054\123\302\123\170\112\117\004\224\101\232\217
\047\062\301\345\111\031\277\361\362\302\213\250\012\071\061\050
\264\175\142\066\054\115\354\037\063\266\176\167\155\176\120\360
\237\016\327\021\217\317\030\305\343\047\376\046\357\005\235\317
\317\067\305\320\173\332\073\260\026\204\014\072\223\326\276\027

```
\333\017\076\016\031\170\011\307\251\002\162\042\113\367\067\166
\272\165\304\205\003\132\143\325\261\165\005\302\271\275\224\255
\214\025\231\247\223\175\366\305\363\252\164\317\004\205\224\230
\000\364\342\371\312\044\145\277\340\142\257\310\305\372\262\311
\236\126\110\332\171\375\226\166\025\276\243\216\126\304\263\064
\374\276\107\364\301\264\250\374\325\060\210\150\356\313\256\311
\143\304\166\276\254\070\030\341\136\134\317\256\072\042\121\353
\321\213\263\363\053\063\007\124\207\372\264\262\023\173\272\123
\004\142\001\235\361\300\117\356\341\072\324\213\040\020\372\002
\127\346\357\301\013\267\220\106\234\031\051\214\334\157\240\112
\151\151\224\267\044\145\240\377\254\077\316\001\373\041\056\375
\150\370\233\362\245\317\061\070\134\025\252\346\227\000\301\337
\132\245\247\071\252\351\204\177\074\121\250\072\331\224\133\214
\277\117\010\161\345\333\250\134\324\322\246\376\000\243\306\026
\307\017\350\200\316\034\050\144\164\031\010\323\102\343\316\000
\135\177\261\334\023\260\341\005\313\321\040\252\206\164\236\071
\347\221\375\377\133\326\367\255\246\057\003\013\155\343\127\124
\353\166\123\030\215\021\230\272
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "HARICA TLS RSA Root CA 2021"

Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e

Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

Not Valid Before: Fri Feb 19 10:55:38 2021

Not Valid After : Mon Feb 13 10:55:37 2045

Fingerprint (SHA-256):

D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D

Fingerprint (SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "HARICA TLS RSA Root CA 2021"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\002\055\005\202\372\210\316\024\014\006\171\336\177\024\020\351
\105\327\245\155
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\145\107\233\130\206\335\054\360\374\242\204\037\036\226\304\221
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
```

```
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123
\101\040\122\157\157\164\040\103\101\040\062\060\062\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211
\070\176
```

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "HARICA TLS ECC Root CA 2021"

#

Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce

Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

Not Valid Before: Fri Feb 19 11:01:10 2021

Not Valid After : Mon Feb 13 11:01:09 2045

Fingerprint (SHA-256):

3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01

Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "HARICA TLS ECC Root

CA 2021"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103
\103\040\122\157\157\164\040\103\101\040\062\060\062\061
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
```

\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103
\103\040\122\157\157\164\040\103\101\040\062\060\062\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342
\277\316

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\124\060\202\001\333\240\003\002\001\002\002\020\147
\164\235\215\167\330\073\152\333\042\364\377\131\342\277\316\060
\012\006\010\052\206\110\316\075\004\003\003\060\154\061\013\060
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163
\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110\101
\122\111\103\101\040\124\114\123\040\105\103\103\040\122\157\157
\164\040\103\101\040\062\060\062\061\060\036\027\015\062\061\060
\062\061\071\061\061\060\061\061\060\132\027\015\064\065\060\062
\061\063\061\061\060\061\060\071\132\060\154\061\013\060\011\006
\003\125\004\006\023\002\107\122\061\067\060\065\006\003\125\004
\012\014\056\110\145\154\154\145\156\151\143\040\101\143\141\144
\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143
\150\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103
\101\061\044\060\042\006\003\125\004\003\014\033\110\101\122\111
\103\101\040\124\114\123\040\105\103\103\040\122\157\157\164\040
\103\101\040\062\060\062\061\060\166\060\020\006\007\052\206\110
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\070
\010\376\261\240\226\322\172\254\257\111\072\320\300\340\303\073
\050\252\361\162\155\145\000\107\210\204\374\232\046\153\252\113
\272\154\004\012\210\136\027\362\125\207\374\060\260\064\342\064
\130\127\032\204\123\351\060\331\251\362\226\164\303\121\037\130
\111\061\314\230\116\140\021\207\165\323\162\224\220\117\233\020
\045\052\250\170\055\276\220\101\130\220\025\162\247\241\267\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\311
\033\123\201\022\376\004\325\026\321\252\274\232\157\267\240\225
\031\156\312\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\206\060\012\006\010\052\206\110\316\075\004\003\003\003
\147\000\060\144\002\060\021\336\256\370\334\116\210\260\251\360
\042\255\302\121\100\357\140\161\055\356\217\002\304\135\003\160
\111\244\222\352\305\024\210\160\246\323\015\260\252\312\054\100
\234\373\351\202\156\232\002\060\053\107\232\007\306\321\302\201
\174\312\013\226\030\101\033\243\364\060\011\236\265\043\050\015


```
\237\024\266\074\123\242\114\006\151\175\372\154\221\306\052\111
\105\346\354\267\023\341\072\154
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "HARICA TLS ECC Root CA 2021"
# Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce
# Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic
Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 11:01:10 2021
# Not Valid After : Mon Feb 13 11:01:09 2045
# Fingerprint (SHA-256):
3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01
# Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA TLS ECC Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\274\260\301\235\351\230\222\160\031\070\127\351\215\247\264\135
\156\356\001\110
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\256\367\114\345\146\065\321\267\233\214\042\223\164\323\113\260
END
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004
\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103
\103\040\122\157\157\164\040\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342
\277\316
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "HARICA Client RSA Root CA 2021"
#
# Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e
# Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 10:58:46 2021
# Not Valid After : Mon Feb 13 10:58:45 2045
# Fingerprint (SHA-256):
1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D
#
Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Client RSA Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002
\050\076
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\252\060\202\003\222\240\003\002\001\002\002\020\125
\122\370\036\333\033\044\054\236\273\226\030\315\002\050\076\060
```

\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\157
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151
\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003\014
\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040\122
\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061\060
\036\027\015\062\061\060\062\061\071\061\060\065\070\064\066\132
\027\015\064\065\060\062\061\063\061\060\065\070\064\065\132\060
\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067
\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151
\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122
\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164
\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003
\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040
\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\201\333\127\102\220\054\164\065\364\370\270\164\031\115\253
\011\132\167\105\201\163\142\260\065\237\370\320\267\063\000\207
\023\266\226\253\016\124\022\060\007\274\233\267\110\327\321\031
\203\256\216\330\251\361\251\000\204\260\214\136\236\350\014\217
\124\151\277\366\324\010\117\046\160\376\030\101\143\032\263\062
\213\100\370\007\253\127\061\360\306\026\166\147\232\264\335\057
\362\321\153\305\320\222\204\221\161\156\017\056\143\351\037\123
\244\335\122\023\314\011\203\051\201\014\305\123\165\104\261\016
\147\123\030\320\303\037\210\113\237\224\044\264\051\274\273\350
\116\375\157\322\025\035\111\334\215\160\362\021\032\040\121\125
\021\272\210\157\304\367\120\171\326\252\061\342\204\075\136\062
\310\167\052\120\161\345\013\057\351\266\352\357\253\012\063\071
\016\375\217\245\147\103\202\216\230\151\011\011\033\100\315\070
\147\107\352\311\354\227\161\022\336\044\365\162\074\321\367\103
\114\046\367\220\262\211\351\105\113\125\075\061\005\172\101\342
\225\272\103\300\027\305\266\205\075\031\215\144\160\363\133\254
\315\237\323\051\165\207\113\225\147\152\246\370\321\335\274\220
\206\211\103\051\251\067\133\365\135\260\046\132\123\102\166\220
\053\317\236\126\154\053\124\317\134\232\145\337\133\213\110\140
\070\174\373\305\013\317\166\004\143\002\063\052\175\365\203\147
\347\372\306\103\375\053\017\324\046\057\167\244\062\301\044\352
\144\235\277\263\070\161\061\104\362\107\270\242\146\101\241\373
\233\173\274\307\106\152\165\277\132\242\214\350\152\104\301\270
\226\265\300\062\010\055\173\164\065\163\262\312\306\376\257\021
\162\030\366\347\310\302\317\245\052\352\173\326\131\350\174\240
\262\152\100\011\151\016\245\226\333\321\000\271\361\210\156\066
\360\210\262\235\361\122\362\303\174\277\060\211\074\012\151\371
\042\244\145\341\233\340\164\306\261\205\227\226\054\256\224\217
\120\246\071\022\037\276\107\362\201\170\323\165\066\236\175\132

\040\227\342\122\256\231\237\306\174\233\146\363\376\330\317\356
\275\227\006\035\055\205\334\076\066\123\226\173\040\272\350\310
\341\255\226\142\076\021\174\263\000\204\236\247\114\161\253\112
\067\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125
\035\016\004\026\004\024\240\326\007\075\136\044\367\173\240\104
\056\044\122\015\031\252\053\004\221\247\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\015\107
\371\011\146\061\122\354\171\356\302\250\362\150\076\355\226\105
\313\072\246\230\143\077\352\053\115\116\003\320\034\202\341\313
\323\345\326\253\133\147\050\274\235\376\014\231\012\200\125\247
\316\033\043\141\015\260\127\360\376\340\312\276\346\220\333\203
\054\276\203\216\364\171\266\376\320\015\102\247\130\037\151\352
\201\365\005\245\376\106\150\353\154\170\311\340\352\347\346\336
\061\305\322\325\054\202\143\050\235\135\250\032\176\210\346\347
\053\361\054\325\320\005\236\334\055\275\067\146\324\004\242\247
\255\277\072\302\250\073\255\377\215\235\063\340\271\232\204\241
\207\037\166\364\202\164\327\016\371\060\110\076\133\210\076\252
\134\153\326\057\014\350\216\163\302\030\221\203\071\266\146\132
\320\037\140\047\135\115\343\366\072\015\146\120\234\170\173\253
\363\023\020\256\017\057\253\350\144\263\030\040\235\106\065\144
\045\163\352\233\020\134\130\065\211\261\106\110\247\364\254\324
\035\236\133\314\251\245\032\023\117\044\120\252\331\033\155\261
\100\373\235\335\130\164\304\302\157\024\162\354\333\065\237\270
\124\165\105\303\246\310\032\050\065\072\256\145\362\251\230\316
\257\133\311\070\214\061\073\177\314\334\226\375\342\133\326\320
\131\364\166\272\013\313\117\203\020\307\100\320\035\140\351\052
\345\110\130\167\014\105\151\276\031\161\004\044\342\343\044\037
\112\310\301\076\231\365\226\230\070\110\045\241\025\260\033\327
\342\204\030\133\366\161\065\232\150\173\100\314\030\134\014\044
\235\324\225\365\231\252\106\352\256\254\277\364\024\031\044\350
\214\354\343\365\274\006\150\212\052\014\005\137\012\227\165\247
\334\176\300\375\327\172\030\337\060\321\070\113\037\260\230\160
\277\314\174\163\360\156\304\061\245\244\227\035\254\277\316\154
\041\112\276\047\043\147\363\006\126\201\012\221\216\266\341\003
\005\063\054\332\064\010\115\116\120\043\255\037\245\305\324\172
\376\352\011\354\247\050\140\213\106\174\265\352\233\335\117\371
\347\153\025\306\210\317\103\333\345\047\334\004\126\156\157\106
\025\361\126\055\350\134\014\163\303\043\201\070\040\313\311\014
\151\317\054\253\073\204\140\063\031\122\375\151\024\063

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "HARICA Client RSA Root CA 2021"

```
# Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e
# Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 10:58:46 2021
# Not Valid After : Mon Feb 13 10:58:45 2045
# Fingerprint (SHA-256):
1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D
#
Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Client RSA Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\106\306\220\012\167\072\266\274\364\145\255\254\374\343\367\007
\000\156\336\156
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\157\355\134\327\210\314\070\251\334\351\335\331\135\333\330\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002
\050\076
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "HARICA Client ECC Root CA 2021"
#
# Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0
# Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 11:03:34 2021
```

Not Valid After : Mon Feb 13 11:03:33 2045

Fingerprint (SHA-256):

8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B

Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "HARICA Client ECC Root CA 2021"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062
\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062
\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\061\150\331\330\341\142\127\036\322\031\104\210\346\020
\175\360

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\132\060\202\001\341\240\003\002\001\002\002\020\061
\150\331\330\341\142\127\036\322\031\104\210\346\020\175\360\060
\012\006\010\052\206\110\316\075\004\003\003\060\157\061\013\060
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163
\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110\101
\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103\040
\122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015

\062\061\060\062\061\071\061\061\060\063\063\064\132\027\015\064
\065\060\062\061\063\061\061\060\063\063\063\132\060\157\061\013
\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006
\003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101
\143\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145
\141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156
\163\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110
\101\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103
\040\122\157\157\164\040\103\101\040\062\060\062\061\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\007\030\255\225\226\224\320\134\017\202\367
\052\100\372\002\311\311\075\066\246\243\004\152\301\155\225\001
\210\140\022\124\154\134\242\053\156\023\072\210\225\014\034\046
\206\066\112\211\031\267\030\336\073\350\250\120\037\312\337\133
\277\111\200\025\333\343\060\341\035\132\307\052\212\001\007\376
\155\054\064\357\050\050\227\274\301\371\127\206\225\213\065\317
\236\132\321\150\225\243\102\060\100\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\122\010\322\276\062\201\045\375\365\032\227
\354\116\137\032\273\123\315\220\255\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\206\060\012\006\010\052\206\110
\316\075\004\003\003\003\147\000\060\144\002\060\114\061\105\106
\117\250\346\276\303\167\262\032\030\113\055\210\173\130\346\253
\224\153\104\003\260\027\377\337\202\163\104\121\054\375\223\035
\006\173\024\322\211\354\100\014\357\041\001\056\002\060\057\311
\056\132\154\054\035\331\225\340\236\260\271\134\122\174\366\370
\070\312\056\361\324\035\362\242\111\242\225\370\301\130\136\117
\376\163\012\357\061\260\253\043\130\023\214\213\336\073

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "HARICA

Client ECC Root CA 2021"

Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0

Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

Not Valid Before: Fri Feb 19 11:03:34 2021

Not Valid After : Mon Feb 13 11:03:33 2045

Fingerprint (SHA-256):

8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B

Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

CKA_LABEL UTF8 "HARICA Client ECC Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\276\144\323\332\024\113\322\153\315\257\217\333\246\246\162\370
\336\046\371\000
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\255\270\120\246\251\202\172\154\075\032\252\244\322\143\244\104
END
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\061\150\331\330\341\142\127\036\322\031\104\210\346\020
\175\360
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"
#
# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Serial Number:1b:70:e9:d2:ff:ae:6c:71
#
# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Not Valid Before: Tue Sep 23 15:22:07 2014
# Not Valid After : Mon May 05 15:22:07 2036
# Fingerprint (SHA-256):
57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A
# Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061

```


\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\010\033\160\351\322\377\256\154\161

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\024\060\202\003\374\240\003\002\001\002\002\010\033
\160\351\322\377\256\154\161\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\121\061\013\060\011\006\003\125\004
\006\023\002\105\123\061\102\060\100\006\003\125\004\003\014\071
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\156\040\106\151\162\155\141
\160\162\157\146\145\163\151\157\156\141\154\040\103\111\106\040
\101\066\062\066\063\064\060\066\070\060\036\027\015\061\064\060
\071\062\063\061\065\062\062\060\067\132\027\015\063\066\060\065
\060\065\061\065\062\062\060\067\132\060\121\061\013\060\011\006
\003\125\004\006\023\002\105\123\061\102\060\100\006\003\125\004
\003\014\071\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\040\106\151
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\040\103
\111\106\040\101\066\062\066\063\064\060\066\070\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\226\153
\216\352\370\373\361\242\065\340\177\114\332\340\303\122\327\175
\266\020\310\002\136\263\103\052\304\117\152\262\312\034\135\050
\232\170\021\032\151\131\127\257\265\040\102\344\213\017\346\337
\133\246\003\222\057\365\021\344\142\327\062\161\070\331\004\014
\161\253\075\121\176\017\007\337\143\005\134\351\277\224\157\301
\051\202\300\264\332\121\260\301\074\273\255\067\112\134\312\361
\113\066\016\044\253\277\303\204\167\375\250\120\364\261\347\306
\057\322\055\131\215\172\012\116\226\151\122\002\252\066\230\354
\374\372\024\203\014\067\037\311\222\067\177\327\201\055\345\304
\271\340\076\064\376\147\364\076\146\321\323\364\100\317\136\142
\064\017\160\006\076\040\030\132\316\367\162\033\045\154\223\164

\024\223\243\163\261\016\252\207\020\043\131\137\040\005\031\107
\355\150\216\222\022\312\135\374\326\053\262\222\074\040\317\341
\137\257\040\276\240\166\177\166\345\354\032\206\141\063\076\347
\173\264\077\240\017\216\242\271\152\157\271\207\046\157\101\154
\210\246\120\375\152\143\013\365\223\026\033\031\217\262\355\233
\233\311\220\365\001\014\337\031\075\017\076\070\043\311\057\217
\014\321\002\376\033\125\326\116\320\215\074\257\117\244\363\376
\257\052\323\005\235\171\010\241\313\127\061\264\234\310\220\262
\147\364\030\026\223\072\374\107\330\321\170\226\061\037\272\053
\014\137\135\231\255\143\211\132\044\040\166\330\337\375\253\116
\246\042\252\235\136\346\047\212\175\150\051\243\347\212\270\332
\021\273\027\055\231\235\023\044\106\367\305\342\330\237\216\177
\307\217\164\155\132\262\350\162\365\254\356\044\020\255\057\024
\332\377\055\232\106\161\107\276\102\337\273\001\333\364\177\323
\050\217\061\131\133\323\311\002\246\264\122\312\156\227\373\103
\305\010\046\157\212\364\273\375\237\050\252\015\325\105\363\023
\072\035\330\300\170\217\101\147\074\036\224\144\256\173\013\305
\350\331\001\210\071\032\227\206\144\101\325\073\207\014\156\372
\017\306\275\110\024\277\071\115\324\236\101\266\217\226\035\143
\226\223\331\225\006\170\061\150\236\067\006\073\200\211\105\141
\071\043\307\033\104\243\025\345\034\370\222\060\273\002\003\001
\000\001\243\201\357\060\201\354\060\035\006\003\125\035\016\004
\026\004\024\145\315\353\253\065\036\000\076\176\325\164\300\034
\264\163\107\016\032\144\057\060\022\006\003\125\035\023\001\001
\377\004\010\060\006\001\001\377\002\001\001\060\201\246\006\003
\125\035\040\004\201\236\060\201\233\060\201\230\006\004\125\035
\040\000\060\201\217\060\057\006\010\053\006\001\005\005\007\002
\001\026\043\150\164\164\160\072\057\057\167\167\167\056\146\151
\162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143
\157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007
\002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157
\000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102
\000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040
\000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145
\000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060
\000\061\000\067\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\002\001\000\164\207\050\002\053\167\037\146
\211\144\355\217\164\056\106\034\273\250\370\370\013\035\203\266
\072\247\350\105\212\007\267\340\076\040\313\341\010\333\023\010
\370\050\241\065\262\200\263\013\121\300\323\126\232\215\063\105
\111\257\111\360\340\075\007\172\105\023\132\377\310\227\330\323
\030\054\175\226\370\335\242\145\103\160\223\220\025\272\220\337
\350\031\260\333\054\212\140\017\267\157\224\007\036\035\246\311
\205\366\275\064\370\100\170\142\020\160\072\276\175\113\071\201
\251\020\324\226\101\273\370\137\034\013\035\010\362\261\260\211
\172\362\367\240\340\304\217\213\170\265\073\130\245\043\216\117
\125\376\066\073\340\014\267\312\052\060\101\040\264\200\315\256

\374\166\146\163\250\256\156\341\174\332\003\350\224\040\346\042
\243\320\037\220\135\040\123\024\046\127\332\124\227\337\026\104
\020\001\036\210\146\217\162\070\223\335\040\267\064\276\327\361
\356\143\216\107\171\050\006\374\363\131\105\045\140\042\063\033
\243\137\250\272\052\332\032\075\315\100\352\214\356\005\025\225
\325\245\054\040\057\247\230\050\356\105\374\361\270\210\000\054
\217\102\332\121\325\234\345\023\150\161\105\103\213\236\013\041
\074\113\134\005\334\032\237\230\216\332\275\042\236\162\315\255
\012\313\314\243\147\233\050\164\304\233\327\032\074\004\130\246
\202\235\255\307\173\157\377\200\226\351\370\215\152\275\030\220
\035\377\111\032\220\122\067\223\057\074\002\135\202\166\013\121
\347\026\307\127\370\070\371\247\315\233\042\124\357\143\260\025
\155\123\145\003\112\136\112\240\262\247\216\111\000\131\070\325
\307\364\200\144\365\156\225\120\270\021\176\025\160\070\112\260
\177\320\304\062\160\300\031\377\311\070\055\024\054\146\364\102
\104\346\125\166\033\200\025\127\377\300\247\247\252\071\252\330
\323\160\320\056\272\353\224\152\372\137\064\206\347\142\265\375
\212\360\060\205\224\311\257\044\002\057\157\326\335\147\376\343
\260\125\117\004\230\117\244\101\126\342\223\320\152\350\326\363
\373\145\340\316\165\304\061\131\014\356\202\310\014\140\063\112
\031\272\204\147\047\017\274\102\135\275\044\124\015\354\035\160
\006\137\244\274\372\040\174\125

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Autoridad de

Certificacion Firmaprofesional CIF A62634068"

Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

Serial Number: 1b:70:e9:d2:ff:ae:6c:71

Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

Not Valid Before: Tue Sep 23 15:22:07 2014

Not Valid After : Mon May 05 15:22:07 2036

Fingerprint (SHA-256):

57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A

Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068 1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\013\276\302\047\042\111\313\071\252\333\065\134\123\343\214\256

\170\377\266\376

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\116\156\233\124\114\312\267\372\110\344\220\261\025\113\034\243

END

CKA_ISSUER MULTILINE_OCTAL

\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\010\033\160\351\322\377\256\154\161

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "vTrus ECC Root CA"

#

Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da

Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

Not Valid Before: Tue Jul 31 07:26:44 2018

Not Valid After : Fri Jul 31 07:26:44 2043

Fingerprint (SHA-256):

30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3

#

Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "vTrus ECC Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103

\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\024\156\152\274\131\252\123\276\230\071\147\242\322\153\244
\073\346\155\034\326\332

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\017\060\202\001\225\240\003\002\001\002\002\024\156
\152\274\131\252\123\276\230\071\147\242\322\153\244\073\346\155
\034\326\332\060\012\006\010\052\206\110\316\075\004\003\003\060
\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034
\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103\150
\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060\030
\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103\103
\040\122\157\157\164\040\103\101\060\036\027\015\061\070\060\067
\063\061\060\067\062\066\064\064\132\027\015\064\063\060\067\063
\061\060\067\062\066\064\064\132\060\107\061\013\060\011\006\003
\125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012
\023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056
\054\114\164\144\056\061\032\060\030\006\003\125\004\003\023\021
\166\124\162\165\163\040\105\103\103\040\122\157\157\164\040\103
\101\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\145\120\112\256\214\171\226
\112\252\034\010\303\243\242\315\376\131\126\101\167\375\046\224
\102\273\035\315\010\333\163\262\133\165\363\317\234\116\202\364
\277\370\141\046\205\154\326\205\133\162\160\322\375\333\142\264
\337\123\213\275\261\104\130\142\102\011\307\372\177\133\020\347
\376\100\375\300\330\303\053\062\347\160\246\267\246\040\125\035
\173\200\135\113\217\147\114\361\020\243\102\060\100\060\035\006
\003\125\035\016\004\026\004\024\230\071\315\276\330\262\214\367
\262\253\341\255\044\257\173\174\241\333\037\317\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\012\006
\010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\060
\127\235\335\126\361\307\343\351\270\111\120\153\233\151\303\157
\354\303\175\045\344\127\225\023\100\233\122\323\073\363\100\031
\274\046\307\055\006\236\265\173\066\237\365\045\324\143\153\000
\002\061\000\351\323\306\236\126\232\052\314\241\332\077\310\146
\053\323\130\234\040\205\372\253\221\212\160\160\021\070\140\144
\013\142\011\221\130\000\371\115\373\064\150\332\011\255\041\006
\030\224\316

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "vTrus ECC Root CA"

Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da

Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN

Not Valid Before: Tue Jul 31 07:26:44 2018

Not Valid After : Fri Jul 31 07:26:44 2043

Fingerprint (SHA-256):

30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3

Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "vTrus ECC Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\366\234\333\260\374\366\002\023\266\122\062\246\243\221\077\026
\160\332\303\341

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\336\113\301\365\122\214\233\103\341\076\217\125\124\027\215\205
END

CKA_ISSUER MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060
\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103
\103\040\122\157\157\164\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\024\156\152\274\131\252\123\276\230\071\147\242\322\153\244
\073\346\155\034\326\332

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "vTrus Root CA"

#

Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45

Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

Not Valid Before: Tue Jul 31 07:24:05 2018

```
# Not Valid After : Fri Jul 31 07:24:05 2043
# Fingerprint (SHA-256):
8A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87
# Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "vTrus Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157
\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157
\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065
\375\157\274\005\215\105
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\126\060\202\003\076\240\003\002\001\002\002\024\103
\343\161\023\330\263\131\024\135\267\316\214\375\065\375\157\274
\005\215\105\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\103\061\013\060\011\006\003\125\004\006\023\002\103
\116\061\034\060\032\006\003\125\004\012\023\023\151\124\162\165
\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061
\026\060\024\006\003\125\004\003\023\015\166\124\162\165\163\040
\122\157\157\164\040\103\101\060\036\027\015\061\070\060\067\063
\061\060\067\062\064\060\065\132\027\015\064\063\060\067\063\061
\060\067\062\064\060\065\132\060\103\061\013\060\011\006\003\125
\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012\023
\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054
\114\164\144\056\061\026\060\024\006\003\125\004\003\023\015\166
\124\162\165\163\040\122\157\157\164\040\103\101\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\275\125\174
\141\323\270\035\004\142\005\240\256\154\267\160\264\101\352\113
```

\003\136\020\077\220\132\034\213\073\260\146\213\154\110\246\034
\042\272\325\100\222\356\063\262\043\131\311\216\274\130\332\213
\236\320\031\362\057\131\306\214\143\132\272\237\243\013\260\263
\232\134\272\021\270\022\351\014\273\317\156\154\200\207\051\024
\003\054\215\044\232\310\144\203\265\152\254\023\054\063\361\237
\334\054\141\074\032\077\160\125\233\255\000\122\177\317\004\271
\376\066\372\234\300\026\256\142\376\226\114\103\176\125\024\276
\032\263\322\155\302\257\166\146\225\153\052\260\224\167\205\136
\004\017\142\035\143\165\367\153\347\313\133\232\160\354\076\147
\005\360\376\007\010\200\317\050\333\005\306\024\047\057\206\175
\360\047\336\377\346\176\063\110\347\013\036\130\321\047\053\123
\016\127\112\145\327\373\242\200\140\374\114\274\065\123\001\152
\227\162\202\257\361\035\160\350\234\365\357\136\302\154\307\107
\176\132\224\205\046\115\073\272\353\114\350\260\011\302\145\302
\235\235\011\233\116\265\227\005\254\365\006\240\367\066\005\176
\364\220\262\153\304\264\371\144\352\351\032\012\310\015\250\355
\047\311\324\347\263\271\253\202\042\220\047\075\052\350\174\220
\357\274\117\375\342\012\044\247\336\145\044\244\135\352\300\166
\060\323\167\120\370\015\004\233\224\066\001\163\312\006\130\246
\323\073\334\372\004\106\023\125\212\311\104\107\270\121\071\032
\056\350\064\342\171\313\131\112\012\177\274\246\357\037\003\147
\152\131\053\045\142\223\331\123\031\146\074\047\142\051\206\115
\244\153\356\377\324\116\272\325\264\342\216\110\132\000\031\011
\361\005\331\316\221\261\367\353\351\071\117\366\157\004\103\232
\125\365\076\005\024\275\277\263\131\264\330\216\063\204\243\220
\122\252\263\002\225\140\371\014\114\150\371\356\325\027\015\370
\161\127\265\045\344\051\356\145\135\257\321\356\074\027\013\132
\103\305\245\206\352\044\236\342\005\007\334\064\102\022\221\326
\071\164\256\114\101\202\333\362\246\110\321\263\233\363\063\252
\363\246\300\305\116\365\364\235\166\143\346\002\306\042\113\301
\225\077\120\144\054\124\345\266\360\074\051\317\127\002\003\001
\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004
\024\124\142\160\143\361\165\204\103\130\216\321\026\040\261\306
\254\032\274\366\211\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\002\001\000\051\272\222\111\247\255
\360\361\160\303\344\227\360\237\251\045\325\153\236\064\376\346
\032\144\366\072\153\122\262\020\170\032\237\114\332\212\332\354
\034\067\122\340\102\113\373\154\166\312\044\013\071\022\025\235
\237\021\055\374\171\144\334\340\340\365\335\340\127\311\245\262
\166\160\120\244\376\267\012\160\325\240\064\361\165\327\115\111
\272\021\321\263\330\354\202\377\353\016\304\277\144\055\175\143
\156\027\170\354\135\174\210\310\353\216\127\166\331\131\004\372
\274\122\037\105\254\360\172\200\354\354\157\166\256\221\333\020
\216\004\334\222\337\240\366\346\256\111\323\301\154\022\033\314
\051\252\371\010\245\342\067\024\312\261\270\146\357\032\202\344
\360\370\361\247\026\151\267\333\251\141\074\237\365\061\313\344


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\000\106\302\057\164\261\261\327\201\356\250\046\225\274\210\257
\114\065\007\052\002\312\170\024\155\107\053\100\126\351\313\052
\140\241\147\003\240\316\214\274\260\162\147\304\061\316\333\064
\345\045\003\140\045\173\161\230\344\300\033\053\137\164\102\322
\113\305\131\010\007\207\276\305\303\177\347\226\331\341\334\050
\227\326\217\005\343\365\233\116\312\035\120\107\005\123\260\312
\071\347\205\240\211\301\005\073\001\067\323\077\111\342\167\353
\043\310\210\146\073\075\071\166\041\106\361\354\137\043\270\353
\242\146\165\164\301\100\367\330\150\232\223\342\055\251\056\275
\034\243\036\310\164\306\244\055\172\040\253\073\270\260\106\375
\157\335\137\122\125\165\142\360\227\240\174\327\070\375\045\337
\315\240\233\020\317\213\270\070\136\136\305\264\246\002\066\241
\036\137\034\317\342\226\235\051\252\375\230\256\122\341\363\101
\122\373\251\056\162\226\237\047\343\252\163\175\370\032\043\146
\173\073\253\145\260\062\001\113\025\076\075\242\117\014\053\065
\242\306\331\147\022\065\060\315\166\056\026\263\231\236\115\117
\116\055\073\064\103\341\232\016\015\244\146\227\272\322\034\112
\114\054\052\213\213\201\117\161\032\251\335\134\173\173\010\305
\000\015\067\100\343\174\173\124\137\057\205\137\166\366\367\247
\260\034\127\126\301\162\350\255\242\257\215\063\111\272\037\212
\334\346\164\174\140\206\157\207\227\173
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "vTrus Root CA"

Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45

Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

Not Valid Before: Tue Jul 31 07:24:05 2018

Not Valid After : Fri Jul 31 07:24:05 2043

Fingerprint (SHA-256):

8A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87

Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "vTrus Root CA"

CKA_CERT_SHA1_HASH

MULTILINE_OCTAL

```
\204\032\151\373\365\315\032\045\064\023\075\343\370\374\270\231
\320\311\024\267
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\270\311\067\337\372\153\061\204\144\305\352\021\152\033\165\374
```

```

END
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157
\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065
\375\157\274\005\215\105
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "ISRG Root X2"
#
# Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US
# Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52
#
Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US
# Not Valid Before: Fri Sep 04 00:00:00 2020
# Not Valid After : Mon Sep 17 16:00:00 2040
# Fingerprint (SHA-256):
69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70
# Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062
END
CKA_ID UTF8
"0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156

```

\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057
\207\122

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\033\060\202\001\241\240\003\002\001\002\002\020\101
\322\235\321\162\352\356\247\200\301\054\154\351\057\207\122\060
\012\006\010\052\206\110\316\075\004\003\003\060\117\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\051\060\047\006\003
\125\004\012\023\040\111\156\164\145\162\156\145\164\040\123\145
\143\165\162\151\164\171\040\122\145\163\145\141\162\143\150\040
\107\162\157\165\160\061\025\060\023\006\003\125\004\003\023\014
\111\123\122\107\040\122\157\157\164\040\130\062\060\036\027\015
\062\060\060\071\060\064\060\060\060\060\060\132\027\015\064
\060\060\071\061\067\061\066\060\060\060\060\132\060\117\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\051\060\047\006
\003\125\004\012\023\040\111\156\164\145\162\156\145\164\040\123
\145\143\165\162\151\164\171\040\122\145\163\145\141\162\143\150
\040\107\162\157\165\160\061\025\060\023\006\003\125\004\003\023
\014\111\123\122\107\040\122\157\157\164\040\130\062\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\315\233\325\237\200\203\012\354\011\112\363
\026\112\076\134\317\167\254\336\147\005\015\035\007\266\334\026
\373\132\213\024\333\342\161\140\304\272\105\225\021\211\216\352
\006\337\367\052\026\034\244\271\305\305\062\340\003\340\036\202
\030\070\213\327\105\330\012\152\156\346\000\167\373\002\121\175
\042\330\012\156\232\133\167\337\360\372\101\354\071\334\165\312
\150\007\014\037\352\243\102\060\100\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\174\102\226\256\336\113\110\073\372\222\370
\236\214\317\155\213\251\162\067\225\060\012\006\010\052\206\110
\316\075\004\003\003\003\150\000\060\145\002\060\173\171\116\106
\120\204\302\104\207\106\033\105\160\377\130\231\336\364\375\244
\322\125\246\040\055\164\326\064\274\101\243\120\137\001\047\126
\264\276\047\165\006\257\022\056\165\230\215\374\002\061\000\213
\365\167\154\324\310\145\252\340\013\054\356\024\235\047\067\244
\371\123\245\121\344\051\203\327\370\220\061\133\102\237\012\365
\376\256\000\150\347\214\111\017\266\157\133\133\025\362\347

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "ISRG Root X2"

Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US

Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52

#

Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US

Not Valid Before: Fri Sep 04 00:00:00 2020

Not Valid After : Mon Sep 17 16:00:00 2040

Fingerprint (SHA-256):

69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70

Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ISRG Root X2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\275\261\271\074\325\227\215\105\306\046\024\125\370\333\225\307

\132\321\123\257

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\323\236\304\036\043\074\246\337\317\243\176\155\340\024\346\345

END

CKA_ISSUER MULTILINE_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156

\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145

\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003

\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130

\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057

\207\122

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "HiPKI Root CA - G1"

#

Issuer: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60

Subject: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

```
# Not Valid Before: Fri Feb 22 09:46:04 2019
# Not Valid After : Thu Dec 31 15:59:59 2037
# Fingerprint (SHA-256):
F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC
# Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HiPKI Root CA - G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107
\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107
\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152
\136\140
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\005\152\060\202\003\122\240\003\002\001\002\002\020\055
\335\254\316\142\227\224\241\103\350\260\315\166\152\136\140\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\117
\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060
\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141
\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164
\144\056\061\033\060\031\006\003\125\004\003\014\022\110\151\120
\113\111\040\122\157\157\164\040\103\101\040\055\040\107\061\060
\036\027\015\061\071\060\062\062\062\060\071\064\066\060\064\132
\027\015\063\067\061\062\063\061\061\065\065\071\065\071\132\060
\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043
\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167
\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114
```

\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110\151
\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107\061
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\364\036\177\122\163\062\014\163\344\275\023\164\243\324\060
\250\320\256\113\330\266\337\165\107\146\364\174\347\071\004\036
\152\160\040\322\132\107\162\147\125\364\245\350\235\325\036\041
\241\360\147\272\314\041\150\276\104\123\277\215\371\342\334\057
\125\310\067\077\037\244\300\234\263\344\167\134\240\106\376\167
\372\032\240\070\352\355\232\162\336\053\275\224\127\072\272\354
\171\347\137\175\102\144\071\172\046\066\367\044\360\325\057\272
\225\230\021\146\255\227\065\326\165\001\200\340\257\364\204\141
\214\015\036\137\174\207\226\136\101\257\353\207\352\370\135\361
\056\210\005\076\114\042\273\332\037\052\335\122\106\144\071\363
\102\316\331\236\014\263\260\167\227\144\234\300\364\243\056\037
\225\007\260\027\337\060\333\000\030\226\114\241\201\113\335\004
\155\123\243\075\374\007\254\324\305\067\202\353\344\225\010\031
\050\202\322\102\072\243\330\123\354\171\211\140\110\140\310\162
\222\120\334\003\217\203\077\262\102\127\132\333\152\351\021\227
\335\205\050\274\060\114\253\343\302\261\105\104\107\037\340\212
\026\007\226\322\041\017\123\300\355\251\176\324\116\354\233\011
\354\257\102\254\060\326\277\321\020\105\340\246\026\262\245\305
\323\117\163\224\063\161\002\241\152\243\326\063\227\117\041\143
\036\133\217\331\301\136\105\161\167\017\201\135\137\041\232\255
\203\314\372\136\326\215\043\137\033\075\101\257\040\165\146\132
\112\366\237\373\253\030\367\161\300\266\035\061\354\073\040\353
\313\342\270\365\256\222\262\367\341\204\113\362\242\362\223\232
\042\236\323\024\157\066\124\275\037\136\131\025\271\163\250\301
\174\157\173\142\351\026\154\107\132\145\363\016\021\233\106\331
\375\155\334\326\234\300\264\175\245\260\335\077\126\157\241\371
\366\344\022\110\375\006\177\022\127\266\251\043\117\133\003\303
\340\161\052\043\267\367\260\261\073\274\230\275\326\230\250\014
\153\366\216\022\147\246\362\262\130\344\002\011\023\074\251\273
\020\264\322\060\105\361\354\367\000\021\337\145\370\334\053\103
\125\277\026\227\304\017\325\054\141\204\252\162\206\376\346\072
\176\302\077\175\356\374\057\024\076\346\205\335\120\157\267\111
\355\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125
\035\016\004\026\004\024\362\167\027\372\136\250\376\366\075\161
\325\150\272\311\106\014\070\330\257\260\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\120\121
\360\165\334\160\004\343\377\252\165\324\161\242\313\236\217\250
\251\323\257\165\307\124\317\072\034\004\231\042\254\304\021\342
\357\063\112\246\043\035\016\015\107\330\067\307\157\257\064\177
\117\201\153\065\117\351\162\245\061\342\170\347\367\116\224\030
\133\100\175\317\153\041\124\206\346\225\172\373\306\312\352\234
\110\116\127\011\135\057\254\364\245\264\227\063\130\325\254\171

\251\314\137\371\205\372\122\305\215\370\221\024\353\072\015\027
\320\122\302\173\343\302\163\216\106\170\006\070\054\350\134\332
\146\304\364\244\360\126\031\063\051\132\145\222\005\107\106\112
\253\204\303\036\047\241\037\021\222\231\047\165\223\017\274\066
\073\227\127\217\046\133\014\273\234\017\324\156\060\007\324\334
\137\066\150\146\071\203\226\047\046\212\310\304\071\376\232\041
\157\325\162\206\351\177\142\345\227\116\320\044\320\100\260\320
\165\010\216\275\150\356\010\327\156\174\020\160\106\033\174\340
\210\262\236\162\206\231\001\343\277\237\111\031\264\045\276\126
\145\256\027\143\345\036\337\350\377\107\245\277\341\046\005\204
\344\260\300\257\347\010\231\250\014\136\046\200\105\324\370\150
\057\226\217\256\342\112\034\234\026\014\023\157\070\207\366\273
\310\064\137\222\003\121\171\160\246\337\313\365\231\115\171\315
\116\274\127\237\103\116\153\056\053\030\370\152\163\214\272\305
\065\357\071\152\101\036\317\161\250\242\262\206\007\133\072\311
\341\357\077\145\004\200\107\062\104\160\225\116\061\147\152\164
\133\020\105\165\352\260\237\320\346\065\376\116\237\213\314\053
\222\105\133\156\045\140\205\106\315\321\252\260\166\146\223\167
\226\276\203\276\070\266\044\116\046\013\314\355\172\126\032\340
\351\132\306\144\255\114\172\000\110\104\057\271\100\273\023\076
\276\025\170\235\205\201\112\052\127\336\325\031\103\332\333\312
\133\107\206\203\013\077\266\015\166\170\163\171\042\136\261\200
\037\317\276\321\077\126\020\230\053\225\207\241\037\235\144\024
\140\071\054\263\000\125\056\344\365\263\016\127\304\221\101\000
\234\077\350\245\337\352\366\377\310\360\255\155\122\250\027\253
\233\141\374\022\121\065\344\045\375\257\252\152\206\071

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "HiPKI Root CA - G1"

Issuer: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60

#

Subject: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

Not Valid Before: Fri Feb 22 09:46:04 2019

Not Valid After : Thu Dec 31 15:59:59 2037

Fingerprint (SHA-256):

F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC

Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "HiPKI Root CA - G1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\152\222\344\250\356\033\354\226\105\067\343\051\127\111\315\226
\343\345\322\140

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\151\105\337\026\145\113\350\150\232\217\166\137\377\200\236\323

END

CKA_ISSUER MULTILINE_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107
\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152
\136\140

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "GlobalSign ECC Root CA - R4"

#

Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4

Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6

Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4

Not Valid Before: Tue Nov 13 00:00:00 2012

Not Valid After : Tue Jan 19 03:14:07 2038

Fingerprint (SHA-256):

B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2

Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151

\147\156
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156

END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\002\003\345\176\365\077\223\375\245\011\041\262\246

END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\334\060\202\001\203\240\003\002\001\002\002\015\002
\003\345\176\365\077\223\375\245\011\041\262\246\060\012\006\010
\052\206\110\316\075\004\003\002\060\120\061\044\060\042\006\003
\125\004\013\023\033\107\154\157\142\141\154\123\151\147\156\040
\105\103\103\040\122\157\157\164\040\103\101\040\055\040\122\064
\061\023\060\021\006\003\125\004\012\023\012\107\154\157\142\141
\154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012
\107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\062
\061\061\061\063\060\060\060\060\060\060\132\027\015\063\070\060
\061\061\071\060\063\061\064\060\067\132\060\120\061\044\060\042
\006\003\125\004\013\023\033\107\154\157\142\141\154\123\151\147
\156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040
\122\064\061\023\060\021\006\003\125\004\012\023\012\107\154\157
\142\141\154\123\151\147\156\061\023\060\021\006\003\125\004\003
\023\012\107\154\157\142\141\154\123\151\147\156\060\131\060\023
\006\007\052\206\110\316\075\002\001\006\010\052\206\110\316\075
\003\001\007\003\102\000\004\270\306\171\323\217\154\045\016\237
\056\071\031\034\003\244\256\232\345\071\007\011\026\312\143\261
\271\206\370\212\127\301\127\316\102\372\163\241\367\145\102\377
\036\301\000\262\156\163\016\377\307\041\345\030\244\252\331\161
\077\250\324\271\316\214\035\243\102\060\100\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\124\260\173\255\105\270\342\100\177
\373\012\156\373\276\063\311\074\243\204\325\060\012\006\010\052
\206\110\316\075\004\003\002\003\107\000\060\104\002\040\042\117
\164\162\271\140\257\361\346\234\240\026\005\120\137\303\136\073
\156\141\164\357\276\001\304\276\030\110\131\141\202\062\002\040
\046\235\124\143\100\336\067\140\120\317\310\330\355\235\202\256
\067\230\274\243\217\114\114\251\064\053\154\357\373\225\233\046

END
CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "GlobalSign ECC Root CA - R4"
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Not Valid Before: Tue Nov 13 00:00:00 2012
# Not Valid After : Tue Jan 19 03:14:07 2038
# Fingerprint (SHA-256):
B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2
# Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\153\240\260\230\341\161\357\132\255\376\110\025\200\167\020\364
\275\157\013\050
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\046\051\370\155\341\210\277\242\145\177\252\304\315\017\177\374
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\176\365\077\223\375\245\011\041\262\246
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GTS Root R1"
#
# Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17
# Subject: CN=GTS Root R1,O=Google

```

```
Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF
# Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\002\003\345\223\157\061\260\023\111\210\153\242\027
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\127\060\202\003\077\240\003\002\001\002\002\015\002
\003\345\223\157\061\260\023\111\210\153\242\027\060\015\006\011
\052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003
\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163
\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024
\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157
\164\040\122\061\060\036\027\015\061\066\060\066\062\062\060\060
\060\060\060\060\132\027\015\063\066\060\066\062\062\060\060\060
\060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157
\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151
\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003
\023\013\107\124\123\040\122\157\157\164\040\122\061\060\202\002
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\266\021
```

\002\213\036\343\241\167\233\073\334\277\224\076\267\225\247\100
\074\241\375\202\371\175\062\006\202\161\366\366\214\177\373\350
\333\274\152\056\227\227\243\214\113\371\053\366\261\371\316\204
\035\261\371\305\227\336\357\271\362\243\351\274\022\211\136\247
\252\122\253\370\043\047\313\244\261\234\143\333\327\231\176\360
\012\136\353\150\246\364\306\132\107\015\115\020\063\343\116\261
\023\243\310\030\154\113\354\374\011\220\337\235\144\051\045\043
\007\241\264\322\075\056\140\340\317\322\011\207\273\315\110\360
\115\302\302\172\210\212\273\272\317\131\031\326\257\217\260\007
\260\236\061\361\202\301\300\337\056\246\155\154\031\016\265\330
\176\046\032\105\003\075\260\171\244\224\050\255\017\177\046\345
\250\010\376\226\350\074\150\224\123\356\203\072\210\053\025\226
\011\262\340\172\214\056\165\326\234\353\247\126\144\217\226\117
\150\256\075\227\302\204\217\300\274\100\300\013\134\275\366\207
\263\065\154\254\030\120\177\204\340\114\315\222\323\040\351\063
\274\122\231\257\062\265\051\263\045\052\264\110\371\162\341\312
\144\367\346\202\020\215\350\235\302\212\210\372\070\146\212\374
\143\371\001\371\170\375\173\134\167\372\166\207\372\354\337\261
\016\171\225\127\264\275\046\357\326\001\321\353\026\012\273\216
\013\265\305\305\212\125\253\323\254\352\221\113\051\314\031\244
\062\045\116\052\361\145\104\320\002\316\252\316\111\264\352\237
\174\203\260\100\173\347\103\253\247\154\243\217\175\211\201\372
\114\245\377\325\216\303\316\113\340\265\330\263\216\105\317\166
\300\355\100\053\375\123\017\260\247\325\073\015\261\212\242\003
\336\061\255\314\167\352\157\173\076\326\337\221\042\022\346\276
\372\330\062\374\020\143\024\121\162\336\135\326\026\223\275\051
\150\063\357\072\146\354\007\212\046\337\023\327\127\145\170\047
\336\136\111\024\000\242\000\177\232\250\041\266\251\261\225\260
\245\271\015\026\021\332\307\154\110\074\100\340\176\015\132\315
\126\074\321\227\005\271\313\113\355\071\113\234\304\077\322\125
\023\156\044\260\326\161\372\364\301\272\314\355\033\365\376\201
\101\330\000\230\075\072\310\256\172\230\067\030\005\225\002\003
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\344\257\053\046\161\032\053\110\047\205\057\122\146
\054\357\360\211\023\161\076\060\015\006\011\052\206\110\206\367
\015\001\001\014\005\000\003\202\002\001\000\237\252\102\046\333
\013\233\276\377\036\226\222\056\076\242\145\112\152\230\272\042
\313\175\301\072\330\202\012\006\306\366\245\336\300\116\207\146
\171\241\371\246\130\234\252\371\265\346\140\347\340\350\261\036
\102\101\063\013\067\075\316\211\160\025\312\265\044\250\317\153
\265\322\100\041\230\317\042\064\317\073\305\042\204\340\305\016
\212\174\135\210\344\065\044\316\233\076\032\124\036\156\333\262
\207\247\374\363\372\201\125\024\142\012\131\251\042\005\061\076
\202\326\356\333\127\064\274\063\225\323\027\033\350\047\242\213
\173\116\046\032\172\132\144\266\321\254\067\361\375\240\363\070
\354\162\360\021\165\235\313\064\122\215\346\166\153\027\306\337

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\206\253\047\216\111\053\165\146\201\020\041\246\352\076\364\256
\045\377\174\025\336\316\214\045\077\312\142\160\012\367\057\011
\146\007\310\077\034\374\360\333\105\060\337\142\210\301\265\017
\235\303\237\112\336\131\131\107\305\207\042\066\346\202\247\355
\012\271\342\007\240\215\173\172\112\074\161\322\342\003\241\037
\062\007\335\033\344\102\316\014\000\105\141\200\265\013\040\131
\051\170\275\371\125\313\143\305\074\114\364\266\377\333\152\137
\061\153\231\236\054\301\153\120\244\327\346\030\024\275\205\077
\147\253\106\237\240\377\102\247\072\177\134\313\135\260\160\035
\053\064\365\324\166\011\014\353\170\114\131\005\363\063\102\303
\141\025\020\033\167\115\316\042\214\324\205\362\105\175\267\123
\352\357\100\132\224\012\134\040\137\116\100\135\142\042\166\337
\377\316\141\275\214\043\170\322\067\002\340\216\336\321\021\067
\211\366\277\355\111\007\142\256\222\354\100\032\257\024\011\331
\320\116\262\242\367\276\356\356\330\377\334\032\055\336\270\066
\161\342\374\171\267\224\045\321\110\163\133\241\065\347\263\231
\147\165\301\031\072\053\107\116\323\102\216\375\061\310\026\146
\332\322\014\074\333\263\216\311\241\015\200\017\173\026\167\024
\277\377\333\011\224\262\223\274\040\130\025\351\333\161\103\363
\336\020\303\000\334\250\052\225\266\302\326\077\220\153\166\333
\154\376\214\274\362\160\065\014\334\231\031\065\334\327\310\106
\143\325\066\161\256\127\373\267\202\155\334
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Trust for "GTS Root R1"

Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US

Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17

Subject: CN=GTS Root R1,O=Google Trust Services LLC,C=US

Not Valid Before: Wed Jun 22 00:00:00 2016

Not Valid After : Sun Jun 22 00:00:00 2036

Fingerprint (SHA-256):

D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF

Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GTS Root R1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\345\214\034\304\221\073\070\143\113\351\020\156\343\255\216\153
\235\331\201\112
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\005\376\320\277\161\250\243\166\143\332\001\340\330\122\334\100

END

CKA_ISSUER MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040

\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124

\123\040\122\157\157\164\040\122\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\015\002\003\345\223\157\061\260\023\111\210\153\242\027

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "GTS Root R2"

#

Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US

Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa

Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US

Not Valid Before: Wed Jun 22 00:00:00 2016

Not Valid After : Sun Jun 22 00:00:00 2036

Fingerprint (SHA-256):

8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8

Fingerprint (SHA1):

9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GTS Root R2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040

\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124

\123\040\122\157\157\164\040\122\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040

\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\005\127\060\202\003\077\240\003\002\001\002\002\015\002
\003\345\256\305\215\004\045\032\253\021\045\252\060\015\006\011
\052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003
\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163
\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024
\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157
\164\040\122\062\060\036\027\015\061\066\060\066\062\062\060\060
\060\060\060\060\132\027\015\063\066\060\066\062\062\060\060\060
\060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157
\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151
\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003
\023\013\107\124\123\040\122\157\157\164\040\122\062\060\202\002
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\316\336
\375\246\373\354\354\024\064\074\007\006\132\154\131\367\031\065
\335\367\301\235\125\252\323\315\073\244\223\162\357\012\372\155
\235\366\360\205\200\133\241\110\122\237\071\305\267\356\050\254
\357\313\166\150\024\271\337\255\001\154\231\037\304\042\035\237
\376\162\167\340\054\133\257\344\004\277\117\162\240\032\064\230
\350\071\150\354\225\045\173\166\241\346\151\271\205\031\275\211
\214\376\255\355\066\352\163\274\377\203\342\313\175\301\322\316
\112\263\215\005\236\213\111\223\337\301\133\320\156\136\360\056
\060\056\202\374\372\274\264\027\012\110\345\210\233\305\233\153
\336\260\312\264\003\360\332\364\220\270\145\144\367\134\114\255
\350\176\146\136\231\327\270\302\076\310\320\023\235\255\356\344
\105\173\211\125\367\212\037\142\122\204\022\263\302\100\227\343
\212\037\107\221\246\164\132\322\370\261\143\050\020\270\263\011
\270\126\167\100\242\046\230\171\306\376\337\045\356\076\345\240
\177\324\141\017\121\113\074\077\214\332\341\160\164\330\302\150
\241\371\301\014\351\241\342\177\273\125\074\166\006\356\152\116
\314\222\210\060\115\232\275\117\013\110\232\204\265\230\243\325
\373\163\301\127\141\335\050\126\165\023\256\207\216\347\014\121
\011\020\165\210\114\274\215\371\173\074\324\042\110\037\052\334
\353\153\273\104\261\313\063\161\062\106\257\255\112\361\214\350
\164\072\254\347\032\042\163\200\322\060\367\045\102\307\042\073
\073\022\255\226\056\306\303\166\007\252\040\267\065\111\127\351
\222\111\350\166\026\162\061\147\053\226\176\212\243\307\224\126
\042\277\152\113\176\001\041\262\043\062\337\344\232\104\155\131

\133\135\365\000\240\034\233\306\170\227\215\220\377\233\310\252
\264\257\021\121\071\136\331\373\147\255\325\133\021\235\062\232
\033\275\325\272\133\245\311\313\045\151\123\125\047\134\340\312
\066\313\210\141\373\036\267\320\313\356\026\373\323\246\114\336
\222\245\324\342\337\365\006\124\336\056\235\113\264\223\060\252
\201\316\335\032\334\121\163\015\117\160\351\345\266\026\041\031
\171\262\346\211\013\165\144\312\325\253\274\011\301\030\241\377
\324\124\241\205\074\375\024\044\003\262\207\323\244\267\002\003
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\273\377\312\216\043\237\117\231\312\333\342\150\246
\245\025\047\027\036\331\016\060\015\006\011\052\206\110\206\367
\015\001\001\014\005\000\003\202\002\001\000\037\312\316\335\307
\276\241\237\331\047\114\013\334\027\230\021\152\210\336\075\346
\161\126\162\262\236\032\116\234\325\053\230\044\135\233\153\173
\260\063\202\011\275\337\045\106\352\230\236\266\033\376\203\074
\322\142\141\301\004\355\316\340\305\311\310\023\023\125\347\250
\143\255\214\173\001\376\167\060\341\316\150\233\005\370\022\356
\171\061\240\101\105\065\050\012\161\244\044\117\214\334\074\202
\007\137\146\334\175\020\376\014\141\263\005\225\356\341\256\201
\017\250\370\307\217\115\250\043\002\046\153\035\203\122\125\316
\265\057\000\312\200\100\340\341\164\254\140\365\207\200\235\256
\066\144\221\135\260\150\030\352\212\141\311\167\250\227\304\311
\307\245\374\125\113\363\360\177\271\145\075\047\150\320\314\153
\372\123\235\341\221\032\311\135\032\226\155\062\207\355\003\040
\310\002\316\132\276\331\352\375\262\115\304\057\033\337\137\172
\365\370\213\306\356\061\072\045\121\125\147\215\144\062\173\351
\236\303\202\272\052\055\351\036\264\340\110\006\242\374\147\257
\037\042\002\163\373\040\012\257\235\124\113\241\315\377\140\107
\260\077\135\357\033\126\275\227\041\226\055\012\321\136\235\070
\002\107\154\271\364\366\043\045\270\240\152\232\053\167\010\372
\304\261\050\220\046\130\010\074\342\176\252\327\075\157\272\061
\210\012\005\353\047\265\241\111\356\240\105\124\173\346\047\145
\231\040\041\250\243\274\373\030\226\273\122\157\014\355\203\121
\114\351\131\342\040\140\305\302\145\222\202\214\363\020\037\016
\212\227\276\167\202\155\077\217\035\135\274\111\047\275\314\117
\017\341\316\166\206\004\043\305\300\214\022\133\375\333\204\240
\044\361\110\377\144\174\320\276\134\026\321\357\231\255\300\037
\373\313\256\274\070\042\006\046\144\332\332\227\016\077\050\025
\104\250\117\000\312\360\232\314\317\164\152\264\076\074\353\225
\354\265\323\132\330\201\231\351\103\030\067\353\263\273\321\130
\142\101\363\146\322\217\252\170\225\124\040\303\132\056\164\053
\325\321\276\030\151\300\254\325\244\317\071\272\121\204\003\145
\351\142\300\142\376\330\115\125\226\342\320\021\372\110\064\021
\354\236\355\005\035\344\310\326\035\206\313

END

CKA_NSS_MOZILLA_CA_POLICY


```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "GTS Root R2"
# Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa
# Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US
# Not Valid Before:
  Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8
# Fingerprint (SHA1): 9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\232\104\111\166\062\333\336\372\320\274\373\132\173\027\275\236
\126\011\044\224
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\036\071\300\123\346\036\051\202\013\312\122\125\066\135\127\334
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GTS Root R3"
#
# Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66
# Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US

```

```
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48
# Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\270\202\353\040\370\045\047\155\075\146
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\011\060\202\001\216\240\003\002\001\002\002\015\002
\003\345\270\202\353\040\370\045\047\155\075\146\060\012\006\010
\052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012
\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123
\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006
\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122
\063\060\036\027\015\061\066\060\066\062\062\060\060\060\060\060
\060\132\027\015\063\066\060\066\062\062\060\060\060\060\060\060
\132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154
\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163
\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107
\124\123\040\122\157\157\164\040\122\063\060\166\060\020\006\007
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142
\000\004\037\117\063\207\063\051\212\241\204\336\313\307\041\130
\101\211\352\126\235\053\113\205\306\035\114\047\274\177\046\121
```

```
\162\157\342\237\326\243\312\314\105\024\106\213\255\357\176\206
\214\354\261\176\057\377\251\161\235\030\204\105\004\101\125\156
\053\352\046\177\273\220\001\343\113\031\272\344\124\226\105\011
\261\325\154\221\104\255\204\023\216\232\214\015\200\014\062\366
\340\047\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\301\361\046\272\240\055\256\205\201\317\323\361\052\022
\275\270\012\147\375\274\060\012\006\010\052\206\110\316\075\004
\003\003\003\151\000\060\146\002\061\000\366\341\040\225\024\173
\124\243\220\026\021\277\204\310\352\157\153\027\236\036\106\230
\040\233\237\323\015\331\254\323\057\315\174\370\133\056\125\273
\277\335\222\367\244\014\334\061\341\242\002\061\000\374\227\146
\146\345\103\026\023\203\335\307\337\057\276\024\070\355\001\316
\261\027\032\021\165\351\275\003\217\046\176\204\345\311\140\246
\225\327\124\131\267\347\021\054\211\324\271\356\027
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GTS Root R3"

Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US

Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66

Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US

Not Valid Before: Wed Jun 22 00:00:00 2016

Not Valid After : Sun Jun 22 00:00:00 2036

Fingerprint (SHA-256):

34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48

Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GTS Root R3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\355\345\161\200\053\310\222\271\133\203\074\322\062\150\077\011
\315\240\036\106
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\076\347\235\130\002\224\106\121\224\345\340\042\112\213\347\163
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
```

```

\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\002\003\345\270\202\353\040\370\045\047\155\075\146
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "GTS Root R4"
#
# Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52
# Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After : Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D
#
Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\064
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\064
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\002\003\345\300\150\357\143\032\234\162\220\120\122

```

END

CKA_VALUE MULTILINE_OCTAL

```
\060\202\002\011\060\202\001\216\240\003\002\001\002\002\015\002
\003\345\300\150\357\143\032\234\162\220\120\122\060\012\006\010
\052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012
\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123
\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006
\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122
\064\060\036\027\015\061\066\060\066\062\062\060\060\060\060\060
\060\132\027\015\063\066\060\066\062\062\060\060\060\060\060\060
\132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154
\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163
\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107
\124\123\040\122\157\157\164\040\122\064\060\166\060\020\006\007
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142
\000\004\363\164\163\247\150\213\140\256\103\270\065\305\201\060
\173\113\111\235\373\301\141\316\346\336\106\275\153\325\141\030
\065\256\100\335\163\367\211\221\060\132\353\074\356\205\174\242
\100\166\073\251\306\270\107\330\052\347\222\221\152\163\351\261
\162\071\237\051\237\242\230\323\137\136\130\206\145\017\241\204
\145\006\321\334\213\311\307\163\310\214\152\057\345\304\253\321
\035\212\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\200\114\326\353\164\377\111\066\243\325\330\374\265\076
\305\152\360\224\035\214\060\012\006\010\052\206\110\316\075\004
\003\003\003\151\000\060\146\002\061\000\350\100\377\203\336\003
\364\237\256\035\172\247\056\271\257\117\366\203\035\016\055\205
\001\035\321\331\152\354\017\302\257\307\136\126\136\134\325\034
\130\042\050\013\367\060\266\057\261\174\002\061\000\360\141\074
\247\364\240\202\343\041\325\204\035\163\206\234\055\257\312\064
\233\361\237\271\043\066\342\274\140\003\235\200\263\232\126\310
\341\342\273\024\171\312\315\041\324\224\265\111\103
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "GTS Root R4"

Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US

Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52

Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US

Not Valid Before: Wed Jun 22 00:00:00 2016

Not Valid After : Sun Jun 22 00:00:00 2036

Fingerprint (SHA-256):

```

34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D
# Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
  CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\167\323\003\147\265\340\014\025\366\014\070\141\337\174\341\073
\222\106\115\107
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\103\226\203\167\031\115\166\263\235\145\122\344\035\042\245\350
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\002\003\345\300\150\357\143\032\234\162\220\120\122
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Telia Root CA v2"
#
# Issuer: CN=Telia Root CA v2,O=Telia Finland
  Oyj,C=FI
# Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e
# Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI
# Not Valid Before: Thu Nov 29 11:55:54 2018
# Not Valid After : Sun Nov 29 11:55:54 2043
# Fingerprint (SHA-256):
24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C
# Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Telia Root CA v2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA_SUBJECT MULTILINE_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164
\040\103\101\040\166\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164
\040\103\101\040\166\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005
\236

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\164\060\202\003\134\240\003\002\001\002\002\017\001
\147\137\047\326\376\172\343\344\254\276\011\133\005\236\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\060\104\061
\013\060\011\006\003\125\004\006\023\002\106\111\061\032\060\030
\006\003\125\004\012\014\021\124\145\154\151\141\040\106\151\156
\154\141\156\144\040\117\171\152\061\031\060\027\006\003\125\004
\003\014\020\124\145\154\151\141\040\122\157\157\164\040\103\101
\040\166\062\060\036\027\015\061\070\061\061\062\071\061\061\065
\065\065\064\132\027\015\064\063\061\061\062\071\061\061\065\065
\065\064\132\060\104\061\013\060\011\006\003\125\004\006\023\002
\106\111\061\032\060\030\006\003\125\004\012\014\021\124\145\154
\151\141\040\106\151\156\154\141\156\144\040\117\171\152\061\031
\060\027\006\003\125\004\003\014\020\124\145\154\151\141\040\122
\157\157\164\040\103\101\040\166\062\060\202\002\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017
\000\060\202\002\012\002\202\002\001\000\262\320\077\007\274\342
\173\320\153\231\370\342\167\151\347\316\235\244\003\274\202\155
\241\376\201\145\037\114\047\254\216\000\272\026\173\353\060\152
\000\300\263\164\150\176\262\257\307\325\142\263\172\077\120\312
\214\066\104\044\143\322\066\351\014\205\366\103\166\325\114\241
\140\162\147\342\050\063\245\313\061\270\072\042\043\064\270\175
\275\126\042\100\235\352\364\173\003\255\150\374\262\201\117\230
\320\164\352\215\345\175\315\143\303\243\366\336\222\302\130\031
\340\226\273\305\304\251\075\245\164\226\376\257\371\211\252\275
\225\027\124\330\170\104\361\014\167\025\222\340\230\102\247\244
\326\252\040\222\315\301\240\263\226\262\072\204\102\215\175\325
\225\344\326\333\351\142\304\130\263\171\305\214\323\065\063\203

\237\165\241\122\047\141\070\361\131\075\216\120\340\275\171\074
\347\154\226\376\136\331\002\145\264\216\134\320\021\064\337\135
\277\122\247\201\000\303\177\231\105\231\025\325\027\310\012\123
\354\143\363\231\175\314\151\022\206\302\027\360\001\236\277\204
\274\321\122\313\033\222\146\316\244\123\345\241\277\304\333\011
\326\346\211\126\053\310\343\174\336\343\377\211\345\065\156\050
\350\154\013\043\121\251\045\005\353\110\370\335\261\312\372\154
\010\121\357\267\030\154\104\312\046\341\163\306\211\006\201\345
\212\254\260\342\051\306\271\044\263\153\104\021\364\245\103\302
\114\103\345\160\066\214\266\063\127\172\225\056\202\240\364\134
\020\263\141\203\366\002\005\206\056\174\055\154\334\003\106\156
\065\223\325\172\225\057\336\040\330\133\176\224\220\004\152\272
\131\075\004\005\165\235\067\242\016\056\075\353\301\244\122\203
\376\320\153\324\146\216\334\306\351\022\116\035\052\127\252\020
\274\174\136\202\175\246\246\311\362\055\271\365\027\047\255\321
\016\211\124\053\225\372\300\255\035\230\024\170\063\102\206\012
\251\163\265\373\164\015\267\033\060\031\304\132\016\034\047\267
\332\030\320\377\212\310\005\272\361\252\034\242\067\267\346\110
\244\106\054\224\352\250\166\142\107\213\020\123\007\110\127\154
\342\222\115\266\256\005\313\334\301\112\136\217\254\075\031\116
\302\355\140\165\053\333\301\312\102\325\002\003\001\000\001\243
\143\060\141\060\037\006\003\125\035\043\004\030\060\026\200\024
\162\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057
\206\330\044\071\060\035\006\003\125\035\016\004\026\004\024\162
\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057\206
\330\044\071\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\002\001\000\240\073\131\247\011\224\076\066
\204\322\176\057\071\245\226\227\372\021\255\374\147\363\161\011
\362\262\211\204\147\104\257\271\357\355\226\354\234\144\333\062
\060\157\147\232\254\176\137\262\253\001\066\176\201\372\344\204
\136\322\254\066\340\153\142\305\175\113\016\202\155\322\166\142
\321\376\227\370\237\060\174\030\371\264\122\167\202\035\166\333
\323\035\251\360\301\232\000\275\155\165\330\175\347\372\307\070
\243\234\160\350\106\171\003\257\056\164\333\165\370\156\123\014
\003\310\231\032\211\065\031\074\323\311\124\174\250\360\054\346
\156\007\171\157\152\341\346\352\221\202\151\012\035\303\176\131
\242\236\153\106\025\230\133\323\257\106\035\142\310\316\200\122
\111\021\077\311\004\022\303\023\174\077\073\212\226\333\074\240
\036\012\264\213\124\262\044\147\015\357\202\313\276\074\175\321
\342\177\256\026\326\126\130\271\332\040\261\203\025\241\357\212
\115\062\157\101\057\023\122\202\224\327\032\301\170\242\121\335
\053\160\155\267\032\371\367\260\340\147\227\126\333\174\141\123
\011\003\050\002\100\307\263\330\375\234\160\152\306\050\303\205
\351\342\355\032\223\240\336\113\230\242\204\076\005\167\001\226
\075\373\264\040\017\234\162\002\172\022\057\325\243\272\121\170
\257\052\053\104\145\116\265\375\012\350\301\315\171\207\141\053


```
\336\200\127\105\277\147\361\233\221\136\245\244\354\131\110\020
\015\070\307\260\372\303\104\155\004\365\170\120\034\222\226\133
\332\365\270\056\272\133\317\345\360\152\235\113\057\130\163\055
\117\055\304\034\076\364\263\077\253\025\016\073\031\101\212\244
\301\127\022\146\161\114\372\123\343\127\353\142\225\011\236\124
\335\321\302\074\127\074\275\070\255\230\144\267\270\003\232\123
\126\140\135\263\330\102\033\134\113\022\212\034\353\353\175\306
\172\151\307\047\177\244\370\213\362\344\224\146\207\113\351\224
\007\011\022\171\212\262\353\164\004\334\316\364\104\131\340\026
\312\305\054\130\327\074\173\317\142\206\152\120\175\065\066\146
\247\373\067\347\050\307\330\320\255\245\151\224\217\350\301\337
\044\370\033\007\061\207\201\330\135\366\350\050\330\112\122\200
\254\023\356\120\024\036\230\307
```

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Telia Root CA v2"

Issuer: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e

Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

Not Valid Before: Thu Nov 29 11:55:54 2018

Not Valid After : Sun Nov 29 11:55:54 2043

Fingerprint (SHA-256):

24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C

Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Telia Root CA v2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\271\231\315\321\163\120\212\304\107\005\010\234\214\210\373\276
\240\053\100\315
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\016\217\254\252\202\337\205\261\364\334\020\034\374\231\331\110
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164
\040\103\101\040\166\062
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005
\236
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "D-TRUST BR Root CA 1 2020"
#
# Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
# Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96
# Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust
GmbH,C=DE
# Not Valid Before: Tue Feb 11 09:45:00 2020
# Not Valid After : Sun Feb 11 09:44:59 2035
# Fingerprint (SHA-256):
E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44
# Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST BR Root CA 1 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113
\115\226
END
CKA_VALUE MULTILINE_OCTAL

```

\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\174
\311\217\053\204\327\337\352\017\311\145\232\323\113\115\226\060
\012\006\010\052\206\110\316\075\004\003\003\060\110\061\013\060
\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003
\125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142
\110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122
\125\123\124\040\102\122\040\122\157\157\164\040\103\101\040\061
\040\062\060\062\060\060\036\027\015\062\060\060\062\061\061\060
\071\064\065\060\060\132\027\015\063\065\060\062\061\061\060\071
\064\064\065\071\132\060\110\061\013\060\011\006\003\125\004\006
\023\002\104\105\061\025\060\023\006\003\125\004\012\023\014\104
\055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006
\003\125\004\003\023\031\104\055\124\122\125\123\124\040\102\122
\040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\306\313\307\050\321\373\204\365\232
\357\102\024\040\341\103\153\156\165\255\374\053\003\204\324\166
\223\045\327\131\073\101\145\153\036\346\064\052\273\164\366\022
\316\350\155\347\253\344\074\116\077\104\010\213\315\026\161\313
\277\222\231\364\244\327\074\120\124\122\220\205\203\170\224\147
\147\243\034\011\031\075\165\064\205\336\355\140\175\307\014\264
\101\122\271\156\345\356\102\243\202\001\015\060\202\001\011\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\163\221\020\253\377
\125\263\132\174\011\045\325\262\272\010\240\153\253\037\155\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056
\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057
\144\055\164\162\165\163\164\137\142\162\137\162\157\157\164\137
\143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240
\167\240\165\206\163\154\144\141\160\072\057\057\144\151\162\145
\143\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145
\164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\102
\122\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060
\061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141
\164\151\157\156\154\151\163\164\060\012\006\010\052\206\110\316
\075\004\003\003\003\151\000\060\146\002\061\000\224\220\055\023
\372\341\143\370\141\143\350\255\205\170\124\221\234\270\223\070
\076\032\101\332\100\026\123\102\010\312\057\216\361\076\201\126
\300\252\330\355\030\304\260\256\364\076\372\046\002\061\000\363
\050\342\306\333\053\231\373\267\121\270\044\243\244\224\172\032
\077\346\066\342\003\127\063\212\060\313\202\307\326\024\021\325
\165\143\133\024\225\234\037\001\317\330\325\162\247\017\073

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Trust for "D-TRUST BR Root CA 1 2020"
# Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
# Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96
# Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
# Not Valid Before: Tue Feb 11 09:45:00 2020
# Not Valid After : Sun Feb 11 09:44:59 2035
# Fingerprint (SHA-256):
E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44
# Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST BR Root CA 1 2020"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\037\133\230\360\343\265\367\164\074\355\346\260\066\175\062\315
\364\011\101\147
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\265\252\113\325\355\367\343\125\056\217\162\012\363\165\270\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113
\115\226
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

#
# Certificate "D-TRUST EV Root CA 1 2020"
#
# Issuer: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE
# Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0

```

```
# Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE
# Not Valid Before: Tue Feb 11 10:00:00 2020
# Not Valid After : Sun Feb 11 09:59:59 2035
# Fingerprint (SHA-256):
08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB
# Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST EV Root CA 1 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373
\377\320
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\137
\002\101\327\172\207\174\114\003\243\254\226\215\373\377\320\060
\012\006\010\052\206\110\316\075\004\003\003\060\110\061\013\060
\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003
\125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142
\110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122
\125\123\124\040\105\126\040\122\157\157\164\040\103\101\040\061
\040\062\060\062\060\060\036\027\015\062\060\060\062\061\061\061
\060\060\060\060\060\132\027\015\063\065\060\062\061\061\060\071
\065\071\065\071\132\060\110\061\013\060\011\006\003\125\004\006
\023\002\104\105\061\025\060\023\006\003\125\004\012\023\014\104
\055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006
\003\125\004\003\023\031\104\055\124\122\125\123\124\040\105\126
\040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
```

\004\000\042\003\142\000\004\361\013\335\206\103\040\031\337\227
\205\350\042\112\233\317\235\230\277\264\005\046\311\313\343\246
\322\217\305\236\170\173\061\211\251\211\255\047\074\145\020\202
\374\337\303\235\116\360\063\043\304\322\062\365\034\260\337\063
\027\135\305\360\261\212\371\357\271\267\024\312\051\112\302\017
\251\177\165\145\111\052\060\147\364\144\367\326\032\167\332\303
\302\227\141\102\173\111\255\243\202\001\015\060\202\001\011\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\177\020\001\026\067
\072\244\050\344\120\370\244\367\354\153\062\266\376\351\213\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240
\074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056
\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057
\144\055\164\162\165\163\164\137\145\166\137\162\157\157\164\137
\143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240
\167\240\165\206\163\154\144\141\160\072\057\057\144\151\162\145
\143\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145
\164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\105
\126\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060
\061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141
\164\151\157\156\154\151\163\164\060\012\006\010\052\206\110\316
\075\004\003\003\003\151\000\060\146\002\061\000\312\074\306\052
\165\302\136\165\142\071\066\000\140\132\213\301\223\231\314\331
\333\101\073\073\207\231\027\073\325\314\117\312\042\367\240\200
\313\371\264\261\033\126\365\162\322\374\031\321\002\061\000\221
\367\060\223\077\020\106\053\161\244\320\073\104\233\300\051\002
\005\262\101\167\121\363\171\132\236\216\024\240\116\102\322\133
\201\363\064\152\003\347\042\070\120\133\355\031\117\103\026

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "D-TRUST EV Root CA 1 2020"

Issuer: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0

Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE

Not Valid Before:

Tue Feb 11 10:00:00 2020

Not Valid After : Sun Feb 11 09:59:59 2035

Fingerprint (SHA-256):

08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB

Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST EV Root CA 1 2020"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\141\333\214\041\131\151\003\220\330\174\234\022\206\124\317\235
\075\364\335\007
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\214\055\235\160\237\110\231\021\006\021\373\351\313\060\300\156
END
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373
\377\320
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert TLS ECC P384 Root G5"
#
# Issuer: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:09:e0:93:65:ac:f7:d9:c8:b9:3e:1c:0b:04:2a:2e:f3
# Subject: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After : Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
01:8E:13:F0:77:25:32:CF:80:9B:D1:B1:72:81:86:72:83:FC:48:C6:E1:3B:E9:C6:98:12:85:4A:49:0C:1B:05
# Fingerprint (SHA1): 17:F3:DE:5E:9F:0F:19:E9:8E:F6:1F:32:26:6E:20:C4:07:AE:30:EE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
CKA_LABEL UTF8 "DigiCert TLS ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061

```

\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\046\060\044\006\003\125\004
\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040
\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\046\060\044\006\003\125\004
\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040
\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\011\340\223\145\254\367\331\310\271\076\034\013\004\052
\056\363
END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\031\060\202\001\237\240\003\002\001\002\002\020\011
\340\223\145\254\367\331\310\271\076\034\013\004\052\056\363\060
\012\006\010\052\206\110\316\075\004\003\003\060\116\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111
\156\143\056\061\046\060\044\006\003\125\004\003\023\035\104\151
\147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120
\063\070\064\040\122\157\157\164\040\107\065\060\036\027\015\062
\061\060\061\061\065\060\060\060\060\060\060\132\027\015\064\066
\060\061\061\064\062\063\065\071\065\071\132\060\116\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111
\156\143\056\061\046\060\044\006\003\125\004\003\023\035\104\151
\147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120
\063\070\064\040\122\157\157\164\040\107\065\060\166\060\020\006
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003
\142\000\004\301\104\241\317\021\227\120\232\336\043\202\065\007
\315\320\313\030\235\322\361\177\167\065\117\073\335\224\162\122
\355\302\073\370\354\372\173\153\130\040\354\231\256\311\374\150
\263\165\271\333\011\354\310\023\365\116\306\012\035\146\060\114
\273\037\107\012\074\141\020\102\051\174\245\010\016\340\042\351
\323\065\150\316\233\143\237\204\265\231\115\130\240\216\365\124
\347\225\311\243\102\060\100\060\035\006\003\125\035\016\004\026
\004\024\301\121\105\120\131\253\076\347\054\132\372\040\042\022
\007\200\210\174\021\152\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075
\004\003\003\003\150\000\060\145\002\061\000\211\152\215\107\347
\354\374\156\125\003\331\147\154\046\116\203\306\375\311\373\053
\023\274\267\172\214\264\145\322\151\151\143\023\143\073\046\120


```
\056\001\241\171\006\221\235\110\277\302\276\002\060\107\303\025
\173\261\240\221\231\111\223\250\074\174\350\106\006\213\054\362
\061\000\224\235\142\310\211\275\031\204\024\351\245\373\001\270
\015\166\103\214\056\123\313\174\337\014\027\226\120
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert TLS ECC P384 Root G5"

Issuer: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US

Serial Number:09:e0:93:65:ac:f7:d9:c8:b9:3e:1c:0b:04:2a:2e:f3

Subject: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After : Sun Jan 14 23:59:59 2046

Fingerprint (SHA-256):

01:8E:13:F0:77:25:32:CF:80:9B:D1:B1:72:81:86:72:83:FC:48:C6:E1:3B:E9:C6:98:12:85:4A:49:0C:1B:05

Fingerprint (SHA1): 17:F3:DE:5E:9F:0F:19:E9:8E:F6:1F:32:26:6E:20:C4:07:AE:30:EE

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert

TLS ECC P384 Root G5"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\027\363\336\136\237\017\031\351\216\366\037\062\046\156\040\304
\007\256\060\356
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\323\161\004\152\103\034\333\246\131\341\250\243\252\305\161\355
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\046\060\044\006\003\125\004
\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040
\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\011\340\223\145\254\367\331\310\271\076\034\013\004\052
\056\363
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```
#
# Certificate "DigiCert TLS RSA4096 Root G5"
#
# Issuer:
  CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:08:f9:b4:78:a8:fa:7e:da:6a:33:37:89:de:7c:cf:8a
# Subject: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After : Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
37:1A:00:DC:05:33:B3:72:1A:7E:EB:40:E8:41:9E:70:79:9D:2B:0A:0F:2C:1D:80:69:31:65:F7:CE:C4:AD:75
# Fingerprint (SHA1): A7:88:49:DC:5D:7C:75:8C:8C:DE:39:98:56:B3:AA:D0:B2:A5:71:35
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert TLS RSA4096 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065
END
CKA_ID
  UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\010\371\264\170\250\372\176\332\152\063\067\211\336\174
\317\212
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\146\060\202\003\116\240\003\002\001\002\002\020\010
\371\264\170\250\372\176\332\152\063\067\211\336\174\317\212\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\115
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164
\054\040\111\156\143\056\061\045\060\043\006\003\125\004\003\023
\034\104\151\147\151\103\145\162\164\040\124\114\123\040\122\123
\101\064\060\071\066\040\122\157\157\164\040\107\065\060\036\027
\015\062\061\060\061\061\065\060\060\060\060\060\060\132\027\015
```

\064\066\060\061\061\064\062\063\065\071\065\071\132\060\115\061
\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025
\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054
\040\111\156\143\056\061\045\060\043\006\003\125\004\003\023\034
\104\151\147\151\103\145\162\164\040\124\114\123\040\122\123\101
\064\060\071\066\040\122\157\157\164\040\107\065\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\263\320\364
\311\171\021\235\375\374\146\201\347\314\325\344\274\354\201\076
\152\065\216\056\267\347\336\257\371\007\115\317\060\235\352\011
\013\231\275\154\127\332\030\112\270\170\254\072\071\250\246\110
\254\056\162\345\275\353\361\032\315\347\244\003\251\077\021\264
\330\057\211\026\373\224\001\075\273\057\370\023\005\241\170\034
\216\050\340\105\340\203\364\131\033\225\263\256\176\003\105\345
\276\302\102\376\356\362\074\266\205\023\230\062\235\026\250\051
\302\013\034\070\334\237\061\167\134\277\047\243\374\047\254\267
\053\275\164\233\027\055\362\201\332\135\260\341\043\027\076\210
\112\022\043\320\352\317\235\336\003\027\261\102\112\240\026\114
\244\155\223\351\077\072\356\072\174\235\130\235\364\116\217\374
\073\043\310\155\270\342\005\332\314\353\354\303\061\364\327\247
\051\124\200\317\104\133\114\157\060\236\363\314\335\037\224\103
\235\115\177\160\160\015\324\072\321\067\360\154\235\233\300\024
\223\130\357\315\101\070\165\274\023\003\225\174\177\343\134\351
\325\015\325\342\174\020\142\252\153\360\075\166\363\077\243\350
\260\301\375\357\252\127\115\254\206\247\030\264\051\301\054\016
\277\144\276\051\214\330\002\055\315\134\057\362\177\357\025\364
\014\025\254\012\260\361\323\015\117\152\115\167\227\001\240\361
\146\267\267\316\357\316\354\354\245\165\312\254\343\341\143\367
\270\241\004\310\274\173\077\135\055\026\042\126\355\110\111\376
\247\057\171\060\045\233\272\153\055\077\235\073\304\027\347\035
\056\373\362\317\246\374\343\024\054\226\230\041\214\264\221\351
\031\140\203\362\060\053\006\163\120\325\230\073\006\351\307\212
\014\140\214\050\370\122\233\156\341\366\115\273\006\044\233\327
\053\046\077\375\052\057\161\365\326\044\276\177\061\236\017\155
\350\217\117\115\243\077\377\065\352\337\111\136\101\217\206\371
\361\167\171\113\033\264\243\136\057\373\106\002\320\146\023\136
\136\205\117\316\330\160\210\173\316\001\265\226\227\327\315\175
\375\202\370\302\044\301\312\001\071\117\215\242\301\024\100\037
\234\146\325\014\011\106\326\362\320\321\110\166\126\072\103\313
\266\012\021\071\272\214\023\154\006\265\236\317\353\002\003\001
\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004
\024\121\063\034\355\066\100\257\027\323\045\315\151\150\362\257
\116\043\076\263\101\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367\015
\001\001\014\005\000\003\202\002\001\000\140\246\257\133\137\127
\332\211\333\113\120\251\304\043\065\041\377\320\141\060\204\221
\267\077\020\317\045\216\311\277\106\064\331\301\041\046\034\160

\031\162\036\243\311\207\376\251\103\144\226\072\310\123\004\012
\266\101\273\304\107\000\331\237\030\030\073\262\016\363\064\352
\044\367\335\257\040\140\256\222\050\137\066\347\135\344\336\307
\074\333\120\071\255\273\075\050\115\226\174\166\306\133\364\301
\333\024\245\253\031\142\007\030\100\137\227\221\334\234\307\253
\265\121\015\346\151\123\125\314\071\175\332\305\021\125\162\305
\073\213\211\370\064\055\244\027\345\027\346\231\175\060\210\041
\067\315\060\027\075\270\362\274\250\165\240\103\334\076\211\113
\220\256\155\003\340\034\243\240\226\011\273\175\243\267\052\020
\104\113\106\007\064\143\355\061\271\004\356\243\233\232\256\346
\061\170\364\352\044\141\073\253\130\144\377\273\207\047\142\045
\201\337\334\241\057\366\355\247\377\172\217\121\056\060\370\244
\001\322\205\071\137\001\231\226\157\132\133\160\031\106\376\206
\140\076\255\200\020\011\335\071\045\057\130\177\273\322\164\360
\367\106\037\106\071\112\330\123\320\363\056\073\161\245\324\157
\374\363\147\344\007\217\335\046\031\341\215\133\372\243\223\021
\233\351\310\072\303\125\150\232\222\341\122\166\070\350\341\272
\275\373\117\325\357\263\347\110\203\061\360\202\041\343\266\276
\247\253\157\357\237\337\114\317\001\270\142\152\043\075\347\011
\115\200\033\173\060\244\303\335\007\177\064\276\244\046\262\366
\101\350\011\035\343\040\230\252\067\117\377\367\361\342\051\160
\061\107\077\164\320\024\026\372\041\212\002\325\212\011\224\167
\056\362\131\050\213\174\120\222\012\146\170\070\203\165\304\265
\132\250\021\306\345\301\235\146\125\317\123\304\257\327\165\205
\251\102\023\126\354\041\167\201\223\132\014\352\226\331\111\312
\241\010\362\227\073\155\233\004\030\044\104\216\174\001\362\334
\045\330\136\206\232\261\071\333\365\221\062\152\321\246\160\212
\242\367\336\244\105\205\046\250\036\214\135\051\133\310\113\330
\232\152\003\136\160\362\205\117\154\113\150\057\312\124\366\214
\332\062\376\303\153\203\077\070\306\176

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert TLS RSA4096 Root G5"

Issuer: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US

Serial Number:08:f9:b4:78:a8:fa:7e:da:6a:33:37:89:de:7c:cf:8a

Subject: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After : Sun Jan 14 23:59:59 2046

Fingerprint (SHA-256):

37:1A:00:DC:05:33:B3:72:1A:7E:EB:40:E8:41:9E:70:79:9D:2B:0A:0F:2C:1D:80:69:31:65:F7:CE:C4:AD:75

Fingerprint (SHA1): A7:88:49:DC:5D:7C:75:8C:8C:DE:39:98:56:B3:AA:D0:B2:A5:71:35

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA_MODIFIABLE CK_BBOOL
CK_FALSE
CKA_LABEL UTF8 "DigiCert TLS RSA4096 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\247\210\111\334\135\174\165\214\214\336\071\230\126\263\252\320
\262\245\161\065
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\254\376\367\064\226\251\362\263\264\022\113\344\047\101\157\341
END
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\010\371\264\170\250\372\176\332\152\063\067\211\336\174
\317\212
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "DigiCert SMIME ECC
# P384 Root G5"
#
# Issuer: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:05:3f:6e:a0:06:01:72:7d:ed:3f:c3:a3:b6:a3:d6:ef
# Subject: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After : Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
E8:E8:17:65:36:A6:0C:C2:C4:E1:01:87:C3:BE:FC:A2:0E:F2:63:49:70:18:F5:66:D5:BE:A0:F9:4D:0C:11:1B
# Fingerprint (SHA1): 1C:B8:A7:08:C9:0D:20:79:01:A0:B2:36:7F:F0:95:65:E4:53:24:FE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert SMIME ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004

```

```
\003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040
\107\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040
\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\077\156\240\006\001\162\175\355\077\303\243\266\243
\326\357
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\034\060\202\001\243\240\003\002\001\002\002\020\005
\077\156\240\006\001\162\175\355\077\303\243\266\243\326\357\060
\012\006\010\052\206\110\316\075\004\003\003\060\120\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111
\156\143\056\061\050\060\046\006\003\125\004\003\023\037\104\151
\147\151\103\145\162\164\040\123\115\111\115\105\040\105\103\103
\040\120\063\070\064\040\122\157\157\164\040\107\065\060\036\027
\015\062\061\060\061\061\065\060\060\060\060\060\060\132\027\015
\064\066\060\061\061\064\062\063\065\071\065\071\132\060\120\061
\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025
\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054
\040\111\156\143\056\061\050\060\046\006\003\125\004\003\023\037
\104\151\147\151\103\145\162\164\040\123\115\111\115\105\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\026\235\125\345\266\324\373\373\147
\153\032\324\241\252\322\167\225\076\210\345\007\237\266\160\146
\040\050\244\210\354\160\065\257\263\062\377\067\023\112\236\274
\001\003\336\204\301\270\306\346\145\107\211\362\023\125\277\315
\245\036\010\140\177\255\177\350\141\222\051\317\011\107\136\013
\034\300\037\244\277\362\133\274\230\357\231\114\314\160\153\266
\272\320\050\035\277\276\004\243\102\060\100\060\035\006\003\125
\035\016\004\026\004\024\163\172\153\226\333\102\007\213\122\146
\302\144\062\027\376\340\147\220\056\255\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\012\006\010\052
\206\110\316\075\004\003\003\003\147\000\060\144\002\060\067\104
\365\062\200\343\161\353\364\155\317\174\314\221\232\303\156\161
```

```
\330\322\043\135\222\115\202\102\155\134\141\225\366\221\365\247
\010\366\152\227\351\234\224\055\230\160\375\063\266\011\002\060
\007\074\057\271\130\202\136\017\243\142\250\223\147\360\040\303
\151\277\003\054\073\120\247\073\257\101\070\311\122\110\221\326
\016\373\274\140\060\174\144\077\022\036\105\177\121\076\364\246
END
```

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert

SMIME ECC P384 Root G5"

Issuer: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US

Serial Number:05:3f:6e:a0:06:01:72:7d:ed:3f:c3:a3:b6:a3:d6:ef

Subject: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After : Sun Jan 14 23:59:59 2046

Fingerprint (SHA-256):

E8:E8:17:65:36:A6:0C:C2:C4:E1:01:87:C3:BE:FC:A2:0E:F2:63:49:70:18:F5:66:D5:BE:A0:F9:4D:0C:11:1B

Fingerprint (SHA1): 1C:B8:A7:08:C9:0D:20:79:01:A0:B2:36:7F:F0:95:65:E4:53:24:FE

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert SMIME ECC P384 Root G5"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\034\270\247\010\311\015\040\171\001\240\262\066\177\360\225\145
\344\123\044\376
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\246\376\364\122\066\104\330\356\015\267\003\013\357\164\263\003
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\120\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040
\107\065
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\005\077\156\240\006\001\162\175\355\077\303\243\266\243
\326\357
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "DigiCert SMIME RSA4096 Root G5"

#

Issuer: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

Serial Number:05:f6:ba:04:23:83:46:cb:7d:5c:e6:b9:5b:ba:1c:55

Subject: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After : Sun Jan 14 23:59:59 2046

Fingerprint (SHA-256):

90:37:0D:3E:FA:88:BF:58:C3:01:05:BA:25:10:4A:35:84:60:A7:FA:52:DF:C2:01:1D:F2:33:A0:F4:17:91:2A

#

Fingerprint (SHA1): 5B:C5:AD:E2:9A:A7:54:DA:84:89:53:A5:FE:D7:5B:46:86:D0:57:08

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert SMIME RSA4096 Root G5"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004
\003\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107
\065

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004
\003\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107
\065

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\005\366\272\004\043\203\106\313\175\134\346\271\133\272
\034\125

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\152\060\202\003\122\240\003\002\001\002\002\020\005
\366\272\004\043\203\106\313\175\134\346\271\133\272\034\125\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\117
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060

\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164
\054\040\111\156\143\056\061\047\060\045\006\003\125\004\003\023
\036\104\151\147\151\103\145\162\164\040\123\115\111\115\105\040
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065\060
\036\027\015\062\061\060\061\061\065\060\060\060\060\060\132
\027\015\064\066\060\061\061\064\062\063\065\071\065\071\132\060
\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027
\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162
\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004\003
\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115\105
\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\340\152\133\331\370\371\175\354\265\173\357\137\335\134\064
\330\332\135\321\313\145\165\253\041\174\133\000\324\202\157\105
\205\101\212\251\022\002\162\062\360\024\365\003\165\273\143\227
\111\017\100\231\013\032\036\126\247\322\320\341\253\335\345\004
\033\343\037\024\022\002\210\365\240\200\011\366\047\232\120\360
\272\343\242\340\254\152\024\221\265\153\070\020\172\242\061\341
\221\033\267\271\360\053\133\310\167\011\166\267\121\304\066\012
\231\123\124\104\045\267\011\065\206\027\005\126\223\075\101\267
\002\327\142\037\212\222\021\207\352\021\155\352\010\021\334\261
\170\110\111\222\366\264\121\200\170\043\330\376\341\126\032\072
\220\023\126\064\211\325\342\225\213\137\336\262\314\373\077\070
\267\205\367\352\236\277\056\241\056\057\115\175\152\021\056\066
\240\377\021\010\004\225\125\340\033\073\147\223\251\224\125\352
\062\355\006\072\177\302\177\343\255\023\047\321\064\101\263\060
\303\277\264\210\370\003\202\244\337\076\253\170\167\240\131\223
\161\347\335\353\000\004\173\314\110\071\050\340\036\243\025\151
\310\066\262\241\013\227\337\125\326\357\221\234\244\366\026\367
\121\012\356\003\043\221\334\004\377\340\335\070\366\042\003\000
\302\007\161\032\022\311\327\106\052\224\033\315\326\273\033\356
\277\276\115\120\130\260\013\315\060\166\051\365\317\345\266\152
\057\166\260\260\151\152\320\155\145\030\065\176\223\274\162\027
\301\125\102\315\057\302\045\273\364\375\035\241\144\042\124\135
\342\236\162\101\204\156\161\226\352\105\007\266\136\172\112\206
\235\163\144\167\070\003\322\017\123\245\125\040\304\115\377\150
\157\125\251\352\335\161\344\117\331\205\243\174\116\051\002\236
\013\011\362\032\123\314\000\246\335\321\064\366\015\301\060\261
\234\002\144\254\065\355\245\260\051\261\322\225\063\017\322\040
\063\275\354\043\113\362\031\371\332\230\144\344\054\061\037\056
\341\215\034\004\225\050\115\214\130\315\113\345\163\202\206\214
\354\250\326\171\134\373\144\273\334\014\114\050\366\027\257\342
\150\326\026\206\230\333\374\001\334\061\272\370\234\016\371\050
\106\112\341\375\226\006\105\171\021\150\027\145\134\213\046\207
\133\002\003\001\000\001\243\102\060\100\060\035\006\003\125\035
\016\004\026\004\024\321\243\324\127\035\117\125\333\165\114\134
\102\236\143\026\316\264\306\073\037\060\016\006\003\125\035\017

\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206
\110\206\367\015\001\001\014\005\000\003\202\002\001\000\007\247
\012\336\123\273\232\353\160\277\262\066\220\315\344\247\270\361
\014\344\135\132\035\170\145\374\311\270\036\043\021\127\174\151
\065\155\001\377\123\120\277\007\016\272\307\001\077\130\052\224
\165\003\253\034\013\043\334\033\212\036\067\075\035\130\217\163
\331\263\052\157\337\020\240\133\014\247\312\260\177\271\044\242
\001\065\062\345\136\106\101\353\330\177\163\347\102\351\244\121
\046\167\201\012\250\353\017\012\120\235\176\212\040\147\374\013
\216\072\021\323\305\214\140\030\331\113\261\374\324\361\264\111
\116\256\207\341\321\373\166\241\137\363\006\317\227\226\014\351
\236\165\201\134\123\015\042\374\066\346\111\156\164\333\000\205
\215\174\042\240\216\373\020\114\324\142\023\133\357\113\162\046
\213\374\116\212\217\376\227\020\123\305\170\213\102\144\033\137
\340\211\375\273\011\177\120\340\124\205\046\021\152\035\145\371
\111\051\334\174\066\337\373\075\367\322\254\356\062\215\156\246
\175\071\234\105\304\312\015\365\073\264\171\123\245\057\126\307
\121\305\212\114\144\135\220\103\043\216\153\114\027\170\314\350
\277\365\073\344\250\110\317\255\233\014\337\062\112\323\331\022
\216\043\170\015\055\257\237\257\236\074\011\302\227\000\355\072
\151\034\161\077\071\337\323\217\304\146\365\357\066\224\017\363
\335\222\266\226\137\220\246\335\163\252\246\040\224\224\045\152
\011\014\162\344\023\043\140\114\243\312\027\056\173\147\000\333
\320\315\352\172\037\071\046\127\211\060\167\313\116\345\225\105
\117\137\373\066\134\075\371\040\265\072\020\045\117\223\062\132
\356\301\226\350\351\126\004\260\111\141\115\354\170\250\235\030
\301\377\330\352\057\126\357\225\053\173\004\136\147\343\125\100
\355\071\004\371\013\171\365\152\214\134\017\211\232\220\307\315
\213\336\333\046\065\241\156\315\263\102\362\242\017\073\014\216
\223\377\024\317\374\367\223\367\344\101\010\156\031\122\021\017
\123\031\163\170\014\317\330\205\201\370\255\125\310\260\236\106
\143\257\234\122\356\134\277\360\300\133\067\036\011\040\322\076
\043\306\241\025\112\016\066\176\060\305\171\152\274\042\210\331
\014\122\100\037\335\116\017\147\046\026\322\255\027\034

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DigiCert SMIME RSA4096 Root G5"

Issuer: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

Serial Number:05:f6:ba:04:23:83:46:cb:7d:5c:e6:b9:5b:ba:1c:55

Subject: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After : Sun Jan 14 23:59:59 2046

```
# Fingerprint (SHA-256):
90:37:0D:3E:FA:88:BF:58:C3:01:05:BA:25:10:4A:35:84:60:A7:FA:52:DF:C2:01:1D:F2:33:A0:F4:17:91:2A
# Fingerprint (SHA1): 5B:C5:AD:E2:9A:A7:54:DA:84:89:53:A5:FE:D7:5B:46:86:D0:57:08
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert SMIME RSA4096 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\133\305\255\342\232\247\124\332\204\211\123\245\376\327\133\106
\206\320\127\010
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\321\173\340\265\077\065\162\237\175\276\013\245\244\035\251\156
END
CKA_ISSUER
MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004
\003\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107
\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\005\366\272\004\043\203\106\313\175\134\346\271\133\272
\034\125
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
#
# Certificate "Certainly Root R1"
#
# Issuer: CN=Certainly Root R1,O=Certainly,C=US
# Serial Number:00:8e:0f:f9:4b:90:71:68:65:33:54:f4:d4:44:39:b7:e0
# Subject: CN=Certainly Root R1,O=Certainly,C=US
# Not Valid Before: Thu Apr 01 00:00:00 2021
# Not Valid After : Sun Apr 01 00:00:00 2046
#
```

```
Fingerprint (SHA-256):
77:B8:2C:D8:64:4C:43:05:F7:AC:C5:CB:15:6B:45:67:50:04:03:3D:51:C6:0C:62:02:A8:E0:C3:34:67:D3:A0
# Fingerprint (SHA1): A0:50:EE:0F:28:71:F4:27:B2:12:6D:6F:50:96:25:BA:CC:86:42:AF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certainly Root R1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\122\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\122\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\216\017\371\113\220\161\150\145\063\124\364\324\104
\071\267\340
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\107\060\202\003\057\240\003\002\001\002\002\021\000
\216\017\371\113\220\161\150\145\063\124\364\324\104\071\267\340
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022
\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151\156
\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145\162
\164\141\151\156\154\171\040\122\157\157\164\040\122\061\060\036
\027\015\062\061\060\064\060\061\060\060\060\060\060\132\027
\015\064\066\060\064\060\061\060\060\060\060\060\132\060\075
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060
\020\006\003\125\004\012\023\011\103\145\162\164\141\151\156\154
\171\061\032\060\030\006\003\125\004\003\023\021\103\145\162\164
\141\151\156\154\171\040\122\157\157\164\040\122\061\060\202\002
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\320\066
\324\037\352\335\253\344\321\266\346\373\042\300\335\023\015\152
\173\042\023\034\227\074\150\143\146\062\234\003\265\215\244\201
\203\332\170\060\021\317\334\262\053\276\222\277\216\344\304\023
\276\244\150\114\332\002\150\026\164\276\262\335\004\344\153\052
\335\067\037\140\054\333\365\367\241\174\225\267\014\160\206\056
\361\072\357\122\367\314\323\233\371\213\276\016\337\061\267\235
\150\134\222\246\365\345\363\012\064\265\377\173\242\344\207\241
\306\257\027\000\357\003\221\355\251\034\116\161\075\322\213\154
\211\364\170\206\346\152\111\240\316\265\322\260\253\233\366\364
\324\056\343\162\371\066\306\353\025\267\045\214\072\374\045\015
\263\042\163\041\164\310\112\226\141\222\365\057\013\030\245\364
```

\255\342\356\101\275\001\171\372\226\214\215\027\002\060\264\371
\257\170\032\214\264\066\020\020\007\005\160\320\364\061\220\212
\121\305\206\046\171\262\021\210\136\305\360\012\124\315\111\246
\277\002\234\322\104\247\355\343\170\357\106\136\155\161\321\171
\160\034\106\137\121\351\311\067\334\137\176\151\173\101\337\064
\105\340\073\204\364\241\212\012\066\236\067\314\142\122\341\211
\015\050\371\172\043\261\015\075\075\232\375\235\201\357\054\220
\300\173\104\116\273\111\340\016\112\126\222\274\313\265\335\171
\027\211\221\336\141\211\164\222\250\343\062\205\276\116\205\244
\113\131\313\053\305\170\216\161\124\320\002\067\231\214\345\111
\352\340\124\162\244\021\006\057\013\214\301\133\276\265\241\260
\123\156\234\270\140\221\037\131\153\371\055\364\224\012\227\265
\354\305\166\003\124\033\145\122\272\114\222\126\121\065\240\100
\330\051\333\256\122\166\073\055\060\100\233\212\320\102\126\264
\267\210\001\244\207\073\123\226\315\243\026\217\363\146\252\027
\261\307\140\340\301\103\005\014\356\233\133\140\157\006\134\207
\133\047\371\100\021\236\234\063\301\267\345\065\127\005\177\047
\316\027\040\214\034\374\361\373\332\061\051\111\355\365\013\204
\247\117\301\366\116\302\050\234\372\356\340\257\007\373\063\021
\172\041\117\013\041\020\266\100\072\253\042\072\004\234\213\233
\204\206\162\232\322\247\245\304\264\165\221\251\053\043\002\003
\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\340\252\077\045\215\237\104\134\301\072\350\056\256
\167\114\204\076\147\014\364\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\003\202\002\001\000\271\127\257\270\022
\332\127\203\217\150\013\063\035\003\123\125\364\225\160\344\053
\075\260\071\353\372\211\142\375\367\326\030\004\057\041\064\335
\361\150\360\325\226\132\336\302\200\243\301\215\306\152\367\131
\167\256\025\144\317\133\171\005\167\146\352\214\323\153\015\335
\361\131\054\301\063\245\060\200\025\105\007\105\032\061\042\266
\222\000\253\231\115\072\217\167\257\251\042\312\057\143\312\025
\326\307\306\360\075\154\374\034\015\230\020\141\236\021\242\042
\327\012\362\221\172\153\071\016\057\060\303\066\111\237\340\351
\017\002\104\120\067\224\125\175\352\237\366\073\272\224\245\114
\351\274\076\121\264\350\312\222\066\124\155\134\045\050\332\335
\255\024\375\323\356\342\042\005\353\320\362\267\150\022\327\132
\212\101\032\306\222\245\132\073\143\105\117\277\341\072\167\042
\057\134\277\106\371\132\003\205\023\102\137\312\336\123\327\142
\265\246\065\004\302\107\377\231\375\204\337\134\316\351\136\200
\050\101\362\175\347\036\220\330\117\166\076\202\074\015\374\245
\003\372\173\032\331\105\036\140\332\304\216\371\374\053\311\173
\225\305\052\377\252\211\337\202\061\017\162\377\014\047\327\012
\036\126\000\120\036\014\220\301\226\265\330\024\205\273\247\015
\026\301\370\007\044\033\272\205\241\032\005\011\200\272\225\143
\311\072\354\045\237\177\235\272\244\107\025\233\104\160\361\152
\113\326\070\136\103\363\030\176\120\156\351\132\050\346\145\346

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\167\033\072\375\035\276\003\046\243\333\324\341\273\176\226\047
\053\035\356\244\373\332\045\124\023\003\336\071\306\303\037\115
\220\354\217\033\112\322\034\355\205\225\070\120\171\106\326\301
\220\120\061\251\134\232\156\035\365\063\126\213\247\231\322\362
\310\054\063\223\222\060\307\116\214\145\063\020\144\027\375\044
\027\226\321\215\302\072\152\053\353\023\213\104\362\041\363\112
\032\267\167\137\327\355\210\244\162\345\071\037\225\235\276\147
\301\160\021\075\273\364\370\111\267\343\046\227\072\237\322\137
\174\373\300\231\174\071\051\340\173\035\277\015\247\217\322\051
\064\156\044\025\313\336\220\136\277\032\304\146\352\302\346\272
\071\137\212\231\251\101\131\007\260\054\257
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Certainly Root R1"

Issuer: CN=Certainly Root R1,O=Certainly,C=US

Serial Number:00:8e:0f:f9:4b:90:71:68:65:33:54:f4:d4:44:39:b7:e0

Subject: CN=Certainly Root R1,O=Certainly,C=US

#

Not Valid Before: Thu Apr 01 00:00:00 2021

Not Valid After : Sun Apr 01 00:00:00 2046

Fingerprint (SHA-256):

77:B8:2C:D8:64:4C:43:05:F7:AC:C5:CB:15:6B:45:67:50:04:03:3D:51:C6:0C:62:02:A8:E0:C3:34:67:D3:A0

Fingerprint (SHA1): A0:50:EE:0F:28:71:F4:27:B2:12:6D:6F:50:96:25:BA:CC:86:42:AF

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certainly Root R1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\240\120\356\017\050\161\364\047\262\022\155\157\120\226\045\272
\314\206\102\257
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\007\160\324\076\202\207\240\372\063\066\023\364\372\063\347\022
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\122\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\021\000\216\017\371\113\220\161\150\145\063\124\364\324\104
\071\267\340
```

```

END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Certainly Root E1"
#
# Issuer: CN=Certainly Root E1,O=Certainly,C=US
# Serial Number:06:25:33:b1:47:03:33:27:5c:f9:8d:9a:b9:bf:cc:f8
# Subject: CN=Certainly Root E1,O=Certainly,C=US
# Not Valid Before: Thu Apr 01 00:00:00 2021
# Not Valid After : Sun Apr 01 00:00:00 2046
# Fingerprint (SHA-256):
B4:58:5F:22:E4:AC:75:6A:4E:86:12:A1:36:1C:5D:9D:03:1A:93:FD:84:FE:BB:77:8F:A3:06:8B:0F:C4:2D:C2
# Fingerprint (SHA1): F9:E1:6D:DC:01:89:CF:D5:82:45:63:3E:C5:37:7D:C2:EB:93:6F:2B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certainly Root E1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\105\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\105\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\006\045\063\261\107\003\063\047\134\371\215\232\271\277
\314\370
END
CKA_VALUE MULTILINE_OCTAL
\060\202\001\367\060\202\001\175\240\003\002\001\002\002\020\006
\045\063\261\107\003\063\047\134\371\215\232\271\277\314\370\060
\012\006\010\052\206\110\316\075\004\003\003\060\075\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\022\060\020\006\003
\125\004\012\023\011\103\145\162\164\141\151\156\154\171\061\032

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\060\030\006\003\125\004\003\023\021\103\145\162\164\141\151\156
\154\171\040\122\157\157\164\040\105\061\060\036\027\015\062\061
\060\064\060\061\060\060\060\060\060\060\132\027\015\064\066\060
\064\060\061\060\060\060\060\060\060\132\060\075\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\022\060\020\006\003\125
\004\012\023\011\103\145\162\164\141\151\156\154\171\061\032\060
\030\006\003\125\004\003\023\021\103\145\162\164\141\151\156\154
\171\040\122\157\157\164\040\105\061\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\336\157\370\177\034\337\355\371\107\207\206\261\244\300\212
\370\202\227\200\352\217\310\112\136\052\175\210\150\247\001\142
\024\221\044\172\134\236\243\027\175\212\206\041\064\030\120\033
\020\336\320\067\113\046\307\031\140\200\351\064\275\140\031\066
\100\326\051\207\011\074\221\172\366\274\023\043\335\131\116\004
\136\317\310\002\034\030\123\301\061\330\332\040\351\104\215\344
\166\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\363\050\030\313\144\165\356\051\052\353\355\256\043\130\070
\205\353\310\042\007\060\012\006\010\052\206\110\316\075\004\003
\003\003\150\000\060\145\002\061\000\261\216\132\040\303\262\031
\142\115\336\260\117\337\156\322\160\212\361\237\176\152\214\346
\272\336\203\151\312\151\263\251\005\265\226\222\027\207\302\322
\352\320\173\316\330\101\133\174\256\002\060\106\336\352\313\135
\232\354\062\302\145\026\260\114\060\134\060\363\332\116\163\206
\006\330\316\211\004\110\067\067\370\335\063\121\235\160\257\173
\125\330\001\056\175\005\144\016\206\270\221

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Certainly Root E1"

Issuer: CN=Certainly

Root E1,O=Certainly,C=US

Serial Number:06:25:33:b1:47:03:33:27:5c:f9:8d:9a:b9:bf:cc:f8

Subject: CN=Certainly Root E1,O=Certainly,C=US

Not Valid Before: Thu Apr 01 00:00:00 2021

Not Valid After : Sun Apr 01 00:00:00 2046

Fingerprint (SHA-256):

B4:58:5F:22:E4:AC:75:6A:4E:86:12:A1:36:1C:5D:9D:03:1A:93:FD:84:FE:BB:77:8F:A3:06:8B:0F:C4:2D:C2

Fingerprint (SHA1): F9:E1:6D:DC:01:89:CF:D5:82:45:63:3E:C5:37:7D:C2:EB:93:6F:2B

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certainly Root E1"


```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\371\341\155\334\001\211\317\325\202\105\143\076\305\067\175\302
\353\223\157\053
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\012\236\312\315\076\122\120\306\066\363\113\243\355\247\123\351
END
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151
\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145
\162\164\141\151\156\154\171\040\122\157\157\164\040\105\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\006\045\063\261\107\003\063\047\134\371\215\232\271\277
\314\370
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "E-Tugra Global Root CA RSA v3"
#
# Issuer: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR
# Serial Number:0d:4d:c5:cd:16:22:95:96:08:7e:b8:0b:7f:15:06:34:fb:79:10:34
# Subject: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG
A.S.,L=Ankara,C=TR
# Not Valid Before: Wed Mar 18 09:07:17 2020
# Not Valid After : Sun Mar 12 09:07:17 2045
# Fingerprint (SHA-256):
EF:66:B0:B1:0A:3C:DB:9F:2E:36:48:C7:6B:D2:AF:18:EA:D2:BF:E6:F1:17:65:5E:28:C4:06:0D:A1:A3:F4:C2
# Fingerprint (SHA1):
E9:A8:5D:22:14:52:1C:5B:AA:0A:B4:BE:24:6A:23:8A:C9:BA:E2:A9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-Tugra Global Root CA RSA v3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
```

\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101
\040\166\063

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101
\040\166\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\024\015\115\305\315\026\042\225\226\010\176\270\013\177\025
\006\064\373\171\020\064

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\363\060\202\003\333\240\003\002\001\002\002\024\015
\115\305\315\026\042\225\226\010\176\270\013\177\025\006\064\373
\171\020\064\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\201\200\061\013\060\011\006\003\125\004\006\023\002
\124\122\061\017\060\015\006\003\125\004\007\023\006\101\156\153
\141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055
\124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035
\060\033\006\003\125\004\013\023\024\105\055\124\165\147\162\141
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060
\044\006\003\125\004\003\023\035\105\055\124\165\147\162\141\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\122
\123\101\040\166\063\060\036\027\015\062\060\060\063\061\070\060
\071\060\067\061\067\132\027\015\064\065\060\063\061\062\060\071
\060\067\061\067\132\060\201\200\061\013\060\011\006\003\125\004
\006\023\002\124\122\061\017\060\015\006\003\125\004\007\023\006
\101\156\153\141\162\141\061\031\060\027\006\003\125\004\012\023
\020\105\055\124\165\147\162\141\040\105\102\107\040\101\056\123
\056\061\035\060\033\006\003\125\004\013\023\024\105\055\124\165
\147\162\141\040\124\162\165\163\164\040\103\145\156\164\145\162
\061\046\060\044\006\003\125\004\003\023\035\105\055\124\165\147
\162\141\040\107\154\157\142\141\154\040\122\157\157\164\040\103
\101\040\122\123\101\040\166\063\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\242\146\360\211\267\162\173
\356\011\311\143\322\323\103\335\136\303\246\204\070\112\361\215

\201\273\024\275\107\350\100\027\363\075\303\170\105\162\246\056
\220\336\232\072\324\040\161\312\274\237\035\113\227\012\307\061
\272\076\327\376\045\251\052\216\066\364\321\057\307\267\251\135
\063\334\060\160\370\100\154\113\262\246\061\141\321\064\074\075
\061\172\307\257\304\247\247\204\341\227\244\350\113\366\027\174
\356\074\007\355\342\212\127\334\266\373\370\103\045\120\352\047
\201\250\206\274\217\122\112\226\072\140\032\226\273\375\163\364
\205\375\203\375\177\204\155\064\154\177\152\267\113\001\003\277
\255\151\267\327\062\331\365\127\152\351\206\202\076\245\146\061
\263\026\075\302\363\046\140\062\323\122\036\260\154\244\067\076
\364\365\257\353\341\337\200\006\317\052\101\347\146\011\341\113
\227\347\167\275\041\155\051\266\147\303\055\176\355\326\171\145
\321\317\072\266\321\261\136\126\141\120\172\132\316\116\120\061
\200\003\230\107\347\344\030\174\104\132\306\244\263\073\306\306
\303\072\360\154\303\213\310\244\221\005\363\365\331\266\252\006
\241\267\253\344\261\352\041\024\134\203\244\374\377\266\120\323
\214\022\046\231\166\160\351\300\017\246\164\374\273\320\033\170
\316\162\222\342\050\234\274\346\351\011\330\072\323\211\346\276
\056\167\337\001\012\157\226\366\345\215\074\115\122\166\032\126
\341\163\176\027\254\075\255\154\243\122\022\030\160\346\200\116
\063\362\176\046\062\254\005\215\070\244\346\166\074\237\020\151
\016\155\235\322\301\171\040\153\133\317\063\215\321\224\166\065
\347\135\125\307\267\254\050\253\106\314\347\073\041\265\012\012
\344\112\131\334\201\065\113\104\225\022\012\147\245\241\377\133
\000\007\322\300\314\371\077\374\237\063\362\000\370\214\154\207
\235\006\055\361\357\343\346\006\372\305\146\023\133\374\120\007
\236\161\206\262\332\157\164\060\317\223\123\350\334\042\326\336
\040\037\141\215\243\056\243\170\062\220\154\334\254\062\265\005
\344\365\074\063\015\326\340\207\167\027\114\235\260\330\011\250
\015\127\367\104\205\360\310\004\276\134\135\132\343\027\216\124
\143\151\177\111\164\144\005\214\243\002\003\001\000\001\243\143
\060\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024
\262\264\256\346\055\367\046\325\252\165\055\166\113\300\033\123
\041\320\110\357\060\035\006\003\125\035\016\004\026\004\024\262
\264\256\346\055\367\046\325\252\165\055\166\113\300\033\123\041
\320\110\357\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\002\001\000\211\250\162\177\214\353\316\056\030
\304\020\200\055\020\014\377\373\024\315\004\340\024\074\116\232
\373\237\051\277\042\236\127\271\202\163\022\143\046\265\314\220
\351\322\052\051\356\234\055\314\054\231\276\105\047\344\261\161
\355\344\070\225\061\101\362\175\172\143\170\337\312\066\026\057
\202\210\237\274\021\107\117\166\115\310\055\216\353\337\055\174
\116\073\332\256\366\343\332\135\024\246\256\350\205\104\235\006
\156\216\373\357\172\112\152\055\053\050\030\376\277\220\054\165
\026\237\017\352\226\175\005\356\233\023\245\104\154\370\003\320
\335\043\341\375\003\022\022\010\364\030\064\263\340\067\013\167

```
\021\001\110\277\141\264\265\370\031\331\313\115\352\243\214\357
\375\360\006\265\155\222\364\112\141\120\204\355\354\111\323\344
\276\150\346\056\343\061\013\124\013\032\222\326\202\330\266\242
\145\074\146\004\371\125\332\154\373\333\265\024\146\115\224\203
\073\315\036\246\053\262\376\167\100\206\253\347\337\012\311\375
\366\335\207\126\030\330\260\054\125\140\226\372\010\176\122\220
\365\113\246\056\207\174\313\040\333\006\076\240\135\003\167\175
\242\074\023\033\051\242\023\125\240\075\024\042\257\157\270\320
\232\033\162\335\005\001\215\206\140\277\244\147\356\265\245\015
\321\177\346\032\053\142\146\303\007\272\347\240\110\034\070\303
\351\105\373\247\177\374\355\002\150\032\312\167\022\167\246\000
\125\050\024\354\326\307\022\242\033\145\102\351\221\350\313\076
\207\211\124\135\331\257\235\227\234\151\347\012\377\017\132\170
\213\143\052\114\175\107\224\077\336\113\351\123\320\060\361\305
\366\236\111\337\073\240\221\243\243\376\315\130\314\352\337\257
\157\050\073\240\151\233\217\354\254\256\053\124\235\233\004\261
\107\040\257\226\022\076\143\224\035\004\347\056\273\206\307\014
\232\210\277\166\107\357\367\260\013\227\146\322\104\317\140\122
\007\341\325\054\112\072\047\141\167\312\327\217\347\207\016\060
\377\014\273\004\342\141\303\242\310\227\141\216\264\060\152\074
\155\302\007\137\112\163\057\077\371\026\212\001\146\357\272\221
\312\122\127\173\256\324\346\017\335\013\172\177\213\236\046\040
\317\073\357\201\161\203\131
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "E-Tugra Global Root CA RSA v3"

Issuer: CN=E-Tugra

Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

Serial Number:0d:4d:c5:cd:16:22:95:96:08:7e:b8:0b:7f:15:06:34:fb:79:10:34

Subject: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

Not Valid Before: Wed Mar 18 09:07:17 2020

Not Valid After : Sun Mar 12 09:07:17 2045

Fingerprint (SHA-256):

EF:66:B0:B1:0A:3C:DB:9F:2E:36:48:C7:6B:D2:AF:18:EA:D2:BF:E6:F1:17:65:5E:28:C4:06:0D:A1:A3:F4:C2

Fingerprint (SHA1): E9:A8:5D:22:14:52:1C:5B:AA:0A:B4:BE:24:6A:23:8A:C9:BA:E2:A9

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "E-Tugra Global Root CA RSA v3"

CKA_CERT_SHA1_HASH MULTILINE OCTAL

```
\351\250\135\042\024\122\034\133\252\012\264\276\044\152\043\212
```

```
\311\272\342\251
```

```
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\042\276\020\366\302\370\003\210\163\137\063\051\107\050\107\244
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101
\040\166\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\015\115\305\315\026\042\225\226\010\176\270\013\177\025
\006\064\373\171\020\064
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "E-Tugra Global Root CA ECC v3"
#
# Issuer: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra
EBG A.S.,L=Ankara,C=TR
# Serial Number:26:46:19:77:31:e1:4f:6f:28:36:de:39:51:86:e6:d4:97:88:22:c1
# Subject: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG
A.S.,L=Ankara,C=TR
# Not Valid Before: Wed Mar 18 09:46:58 2020
# Not Valid After : Sun Mar 12 09:46:58 2045
# Fingerprint (SHA-256):
87:3F:46:85:FA:7F:56:36:25:25:2E:6D:36:BC:D7:F1:6F:C2:49:51:F2:64:E4:7E:1B:95:4F:49:08:CD:CA:13
# Fingerprint (SHA1): 8A:2F:AF:57:53:B1:B0:E6:A1:04:EC:5B:6A:69:71:6D:F6:1C:E2:84
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-Tugra Global Root CA ECC v3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
```

\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103
\040\166\063

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103
\040\166\063

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\024\046\106\031\167\061\341\117\157\050\066\336\071\121\206
\346\324\227\210\042\301

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\002\245\060\202\002\052\240\003\002\001\002\002\024\046
\106\031\167\061\341\117\157\050\066\336\071\121\206\346\324\227
\210\042\301\060\012\006\010\052\206\110\316\075\004\003\003\060
\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162\141
\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165\147
\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033\006
\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124\162
\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006\003
\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154\157
\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103\040
\166\063\060\036\027\015\062\060\060\063\061\070\060\071\064\066
\065\070\132\027\015\064\065\060\063\061\062\060\071\064\066\065
\070\132\060\201\200\061\013\060\011\006\003\125\004\006\023\002
\124\122\061\017\060\015\006\003\125\004\007\023\006\101\156\153
\141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055
\124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035
\060\033\006\003\125\004\013\023\024\105\055\124\165\147\162\141
\040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060
\044\006\003\125\004\003\023\035\105\055\124\165\147\162\141\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\105
\103\103\040\166\063\060\166\060\020\006\007\052\206\110\316\075

```
\002\001\006\005\053\201\004\000\042\003\142\000\004\216\230\051
\277\307\020\036\047\333\253\003\314\050\054\330\136\110\031\020
\051\314\313\131\201\314\214\270\222\027\211\203\052\222\366\303
\244\035\114\142\325\237\326\240\106\334\034\274\166\301\343\107
\320\133\023\332\347\245\263\146\110\347\041\232\112\117\206\012
\175\154\352\115\062\200\012\262\172\011\233\151\113\230\201\342
\056\354\002\160\226\037\375\365\106\316\312\334\202\243\143\060
\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\377
\202\061\162\076\371\304\146\154\255\070\236\321\260\121\210\245
\220\314\365\060\035\006\003\125\035\016\004\026\004\024\377\202
\061\162\076\371\304\146\154\255\070\236\321\260\121\210\245\220
\314\365\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003\151
\000\060\146\002\061\000\346\005\130\151\141\345\055\312\015\313
\361\031\010\275\326\375\121\222\032\176\143\124\004\220\221\232
\065\221\071\231\372\007\251\146\223\272\310\150\324\212\077\372
\355\156\026\002\047\267\002\061\000\335\132\027\053\166\035\145
\102\226\246\254\135\212\171\126\330\212\033\337\232\336\137\307
\120\217\261\133\161\014\046\337\152\100\000\354\063\221\041\161
\276\150\344\043\244\331\255\241\067
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "E-Tugra Global Root CA ECC v3"

Issuer: CN=E-Tugra Global

Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

Serial Number:26:46:19:77:31:e1:4f:6f:28:36:de:39:51:86:e6:d4:97:88:22:c1

Subject: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG
A.S.,L=Ankara,C=TR

Not Valid Before: Wed Mar 18 09:46:58 2020

Not Valid After : Sun Mar 12 09:46:58 2045

Fingerprint (SHA-256):

87:3F:46:85:FA:7F:56:36:25:25:2E:6D:36:BC:D7:F1:6F:C2:49:51:F2:64:E4:7E:1B:95:4F:49:08:CD:CA:13

Fingerprint (SHA1): 8A:2F:AF:57:53:B1:B0:E6:A1:04:EC:5B:6A:69:71:6D:F6:1C:E2:84

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "E-Tugra Global Root CA ECC v3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\212\057\257\127\123\261\260\346\241\004\354\133\152\151\161\155
\366\034\342\204
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\106\274\201\273\361\265\036\367\113\226\274\024\342\347\047\144

END

CKA_ISSUER MULTILINE_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103
\040\166\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\024\046\106\031\167\061\341\117\157\050\066\336\071\121\206
\346\324\227\210\042\301

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "DIGITALSIGN GLOBAL ROOT RSA CA"

#

Issuer: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

#

Serial Number:5d:59:c8:ca:ab:09:57:f5:e6:b5:da:29:94:04:6a:ff:c5:d4:95:87

Subject: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

Not Valid Before: Thu Jan 21 10:50:34 2021

Not Valid After : Mon Jan 15 10:50:34 2046

Fingerprint (SHA-256):

82:BD:5D:85:1A:CF:7F:6E:1B:A7:BF:CB:C5:30:30:D0:E7:BC:3C:21:DF:77:2D:85:8C:AB:41:D1:99:BD:F5:95

Fingerprint (SHA1): B9:82:07:97:AE:52:A5:68:6F:46:07:DF:FD:03:72:3D:92:86:88:2D

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT RSA CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\142\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\047\060\045\006
\003\125\004\003\014\036\104\111\107\111\124\101\114\123\111\107
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\122\123


```
\101\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\047\060\045\006
\003\125\004\003\014\036\104\111\107\111\124\101\114\123\111\107
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\122\123
\101\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\135\131\310\312\253\011\127\365\346\265\332\051\224\004
\152\377\305\324\225\207
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\265\060\202\003\235\240\003\002\001\002\002\024\135
\131\310\312\253\011\127\365\346\265\332\051\224\004\152\377\305
\324\225\207\060\015\006\011\052\206\110\206\367\015\001\001\015
\005\000\060\142\061\013\060\011\006\003\125\004\006\023\002\120
\124\061\052\060\050\006\003\125\004\012\014\041\104\151\147\151
\164\141\154\123\151\147\156\040\103\145\162\164\151\146\151\143
\141\144\157\162\141\040\104\151\147\151\164\141\154\061\047\060
\045\006\003\125\004\003\014\036\104\111\107\111\124\101\114\123
\111\107\116\040\107\114\117\102\101\114\040\122\117\117\124\040
\122\123\101\040\103\101\060\036\027\015\062\061\060\061\062\061
\061\060\065\060\063\064\132\027\015\064\066\060\061\061\065\061
\060\065\060\063\064\132\060\142\061\013\060\011\006\003\125\004
\006\023\002\120\124\061\052\060\050\006\003\125\004\012\014\041
\104\151\147\151\164\141\154\123\151\147\156\040\103\145\162\164
\151\146\151\143\141\144\157\162\141\040\104\151\147\151\164\141
\154\061\047\060\045\006\003\125\004\003\014\036\104\111\107\111
\124\101\114\123\111\107\116\040\107\114\117\102\101\114\040\122
\117\117\124\040\122\123\101\040\103\101\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\310\207\266\070\323
\034\360\336\022\370\203\307\304\212\342\211\270\264\042\172\170
\370\014\146\121\150\166\067\012\325\117\302\132\010\270\026\134
\367\162\001\011\067\204\201\052\124\153\327\222\320\154\372\250
\247\103\022\064\353\016\333\067\017\051\376\212\061\121\102\350
\113\234\220\250\310\054\021\323\375\240\051\176\316\336\224\366
\202\340\130\264\116\105\045\361\042\362\075\323\017\173\124\032
\334\062\266\326\121\116\176\101\264\127\270\054\306\271\016\056
\312\127\361\325\310\323\130\347\245\351\102\021\256\323\040\045
\224\151\327\217\312\242\015\303\323\237\007\150\077\025\322\147
\056\123\375\166\202\233\013\163\251\051\015\236\021\223\024\010
```

\230\354\236\124\022\112\126\242\006\025\354\153\154\056\222\140
\056\206\015\256\202\037\121\115\343\262\007\327\020\031\127\042
\366\251\151\104\204\363\331\075\240\006\277\314\210\176\177\365
\316\133\245\302\052\152\164\102\352\157\246\377\371\150\261\320
\137\275\221\322\125\157\063\127\114\036\235\344\342\213\301\205
\145\240\340\152\234\000\000\210\222\335\130\010\026\362\160\061
\250\034\341\336\275\116\161\351\326\276\176\265\241\132\303\115
\367\277\233\275\224\244\375\365\252\123\223\106\311\046\001\004
\160\304\240\161\272\316\045\146\373\221\176\125\160\356\111\012
\115\142\177\302\120\232\162\362\030\147\235\351\105\250\064\204
\350\370\201\366\321\132\042\036\007\117\073\263\177\335\021\245
\163\334\276\251\031\072\151\251\155\033\062\342\211\252\245\047
\013\132\176\164\342\017\144\071\135\176\134\271\301\027\374\307
\215\136\311\354\044\355\322\362\077\172\204\105\067\002\276\076
\153\131\304\346\133\026\155\300\252\236\252\265\131\056\054\160
\125\234\314\231\226\230\044\124\321\216\332\312\264\021\264\267
\160\103\037\157\220\013\040\240\250\166\023\145\333\333\043\132
\165\113\241\013\061\167\012\356\175\150\141\032\023\214\352\121
\176\134\126\243\127\114\135\241\353\023\145\277\124\024\314\363
\356\334\327\354\074\227\362\170\126\270\337\162\134\160\374\316
\006\335\237\322\007\061\357\347\122\221\236\315\272\327\300\030
\104\007\061\145\111\062\151\023\112\353\217\002\003\001\000\001
\243\143\060\141\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\037\006\003\125\035\043\004\030\060\026
\200\024\265\066\274\074\214\032\253\054\366\131\031\055\203\024
\332\223\045\025\326\206\060\035\006\003\125\035\016\004\026\004
\024\265\066\274\074\214\032\253\054\366\131\031\055\203\024\332
\223\045\025\326\206\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001
\001\015\005\000\003\202\002\001\000\024\373\061\045\070\061\370
\312\010\262\043\166\070\255\370\323\131\365\314\264\127\045\341
\104\276\176\374\026\354\256\372\046\237\117\147\026\112\126\360
\375\355\307\031\001\064\216\220\132\055\326\200\134\354\161\322
\201\045\202\036\000\161\337\232\321\325\035\042\273\321\245\363
\142\017\264\353\334\044\163\376\246\126\315\232\024\305\004\065
\026\061\242\007\353\245\000\342\266\370\137\162\375\077\141\111
\216\336\176\115\070\327\172\036\164\067\154\121\334\276\000\004
\270\070\024\363\040\301\355\233\247\043\375\015\102\204\035\177
\362\163\303\320\170\143\361\237\354\327\133\351\361\276\154\240
\113\003\236\215\151\341\024\332\210\020\201\043\123\377\332\124
\053\013\306\271\226\225\004\030\106\363\173\250\227\330\133\150
\244\344\070\034\016\105\345\230\323\011\256\232\136\354\263\171
\015\071\162\362\364\224\235\016\236\140\042\346\250\366\114\205
\315\007\202\072\150\071\315\075\137\343\070\364\266\257\073\153
\112\237\140\121\105\242\100\002\345\252\014\343\076\321\170\324
\242\164\234\046\272\005\232\050\160\112\076\246\013\320\035\111
\360\272\370\256\101\020\176\244\007\022\275\250\317\051\075\127
\273\307\361\103\107\000\076\256\160\030\132\040\173\011\313\072

```
\072\160\200\345\114\140\230\301\025\301\035\112\367\310\360\233
\341\162\255\347\135\150\130\013\004\261\214\274\237\267\373\156
\213\133\004\125\373\353\043\125\327\170\120\332\045\313\276\047
\066\273\044\032\171\034\121\321\376\023\273\377\170\054\334\244
\276\057\366\305\113\123\317\247\114\231\136\160\254\131\210\004
\256\144\004\277\173\246\172\115\323\350\167\275\241\176\120\025
\363\357\111\060\205\115\041\127\252\333\054\165\227\255\201\001
\207\242\261\160\235\036\006\132\003\140\261\077\246\155\202\054
\324\024\261\201\245\350\075\210\035\264\162\054\130\067\212\216
\070\224\270\163\335\251\340\270\366\167\242\263\174\130\336\256
\151\072\265\213\245\032\273\362\330\164\006\234\375\142\163\040
\041\166\261\176\160\236\031\324\353\027\142\031\070\231\315\066
\053\107\376\061\313\337\271\344\254\010\323\330\246\353\324\236
\176\113\144\244\125\135\053\027\311
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "DIGITALSIGN GLOBAL ROOT RSA CA"

Issuer: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

Serial Number:5d:59:c8:ca:ab:09:57:f5:e6:b5:da:29:94:04:6a:ff:c5:d4:95:87

#

Subject: CN=DIGITALSIGN GLOBAL ROOT RSA CA,O=DigitalSign Certificadora Digital,C=PT

Not Valid Before: Thu Jan 21 10:50:34 2021

Not Valid After : Mon Jan 15 10:50:34 2046

Fingerprint (SHA-256):

82:BD:5D:85:1A:CF:7F:6E:1B:A7:BF:CB:C5:30:30:D0:E7:BC:3C:21:DF:77:2D:85:8C:AB:41:D1:99:BD:F5:95

Fingerprint (SHA1): B9:82:07:97:AE:52:A5:68:6F:46:07:DF:FD:03:72:3D:92:86:88:2D

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT RSA CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\271\202\007\227\256\122\245\150\157\106\007\337\375\003\162\075
\222\206\210\055
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\033\032\275\032\171\306\333\264\355\263\207\314\251\323\116\170
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\142\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\047\060\045\006
\003\125\004\003\014\036\104\111\107\111\124\101\114\123\111\107
```

\116\040\107\114\117\102\101\114\040\122\117\117\124\040\122\123
\101\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\024\135\131\310\312\253\011\127\365\346\265\332\051\224\004

\152\377\305\324\225\207

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#

Certificate "DIGITALSIGN GLOBAL ROOT ECDSA CA"

#

Issuer: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT

Serial Number:36:2d:8f:72:88:a2:28:27:e4:00:ff:24:c6:2d:e4:eb:fa:9d:b6:e1

Subject: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT

Not Valid Before: Thu Jan 21 11:07:50 2021

Not Valid After : Mon Jan 15 11:07:50 2046

Fingerprint

(SHA-256):

26:1D:71:14:AE:5F:8F:F2:D8:C7:20:9A:9D:E4:28:9E:6A:FC:9D:71:70:23:D8:54:50:90:91:99:F1:85:7C:FE

Fingerprint (SHA1): 67:A8:08:EB:8F:88:F5:80:6C:05:45:1B:17:F3:D7:00:2F:D2:4A:8A

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT ECDSA CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061

\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141

\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144

\157\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006

\003\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107

\116\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103

\104\123\101\040\103\101

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061

\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141

\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144

\157\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006

\003\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107

\116\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103

\104\123\101\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\066\055\217\162\210\242\050\047\344\000\377\044\306\055
\344\353\372\235\266\341
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\152\060\202\001\360\240\003\002\001\002\002\024\066
\055\217\162\210\242\050\047\344\000\377\044\306\055\344\353\372
\235\266\341\060\012\006\010\052\206\110\316\075\004\003\003\060
\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061\052
\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141\154
\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144\157
\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006\003
\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107\116
\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103\104
\123\101\040\103\101\060\036\027\015\062\061\060\061\062\061\061
\061\060\067\065\060\132\027\015\064\066\060\061\061\065\061\061
\060\067\065\060\132\060\144\061\013\060\011\006\003\125\004\006
\023\002\120\124\061\052\060\050\006\003\125\004\012\014\041\104
\151\147\151\164\141\154\123\151\147\156\040\103\145\162\164\151
\146\151\143\141\144\157\162\141\040\104\151\147\151\164\141\154
\061\051\060\047\006\003\125\004\003\014\040\104\111\107\111\124
\101\114\123\111\107\116\040\107\114\117\102\101\114\040\122\117
\117\124\040\105\103\104\123\101\040\103\101\060\166\060\020\006
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003
\142\000\004\156\013\243\253\063\115\034\352\112\350\374\004\215
\024\240\175\360\010\054\137\203\253\223\321\322\173\272\327\111
\175\217\354\022\120\137\324\271\313\345\360\371\063\143\037\311
\127\354\100\330\021\013\227\350\122\026\314\051\216\364\006\206
\036\070\334\075\127\304\356\252\275\310\124\004\046\132\047\023
\121\107\075\037\037\032\216\250\225\244\063\320\314\107\314\155
\270\374\110\243\143\060\141\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043\004
\030\060\026\200\024\316\257\112\213\032\165\342\361\070\347\002
\360\026\255\136\352\144\325\173\264\060\035\006\003\125\035\016
\004\026\004\024\316\257\112\213\032\165\342\361\070\347\002\360
\026\255\136\352\144\325\173\264\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\012\006\010\052\206\110\316
\075\004\003\003\003\150\000\060\145\002\060\012\210\304\161\234
\104\003\115\215\264\307\274\250\256\331\060\047\065\152\153\026
\143\327\374\347\131\341\247\211\033\114\061\232\043\125\104\346
\363\103\041\325\107\047\157\155\127\001\252\002\061\000\373\262
\352\342\227\177\121\265\237\110\353\274\157\065\211\250\144\160
\253\127\166\315\300\306\024\140\312\177\342\202\000\163\367\314
\065\352\216\044\233\345\010\131\307\004\214\163\170\376
END

```

CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Trust for "DIGITALSIGN GLOBAL ROOT ECDSA CA"
# Issuer: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT
# Serial Number:36:2d:8f:72:88:a2:28:27:e4:00:ff:24:c6:2d:e4:eb:fa:9d:b6:e1
# Subject: CN=DIGITALSIGN GLOBAL ROOT ECDSA CA,O=DigitalSign Certificadora Digital,C=PT
# Not Valid Before: Thu Jan 21 11:07:50 2021
# Not Valid After : Mon Jan 15 11:07:50 2046
# Fingerprint (SHA-256):
26:1D:71:14:AE:5F:8F:F2:D8:C7:20:9A:9D:E4:28:9E:6A:FC:9D:71:70:23:D8:54:50:90:91:99:F1:85:7C:FE
# Fingerprint (SHA1): 67:A8:08:EB:8F:88:F5:80:6C:05:45:1B:17:F3:D7:00:2F:D2:4A:8A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DIGITALSIGN GLOBAL ROOT ECDSA CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\147\250\010\353\217\210\365\200\154\005\105\033\027\363\327\000
\057\322\112\212
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\252\055\241\316\377\041\302\210\313\132\036\214\341\311\222\217
END
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\052\060\050\006\003\125\004\012\014\041\104\151\147\151\164\141
\154\123\151\147\156\040\103\145\162\164\151\146\151\143\141\144
\157\162\141\040\104\151\147\151\164\141\154\061\051\060\047\006
\003\125\004\003\014\040\104\111\107\111\124\101\114\123\111\107
\116\040\107\114\117\102\101\114\040\122\117\117\124\040\105\103
\104\123\101\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\066\055\217\162\210\242\050\047\344\000\377\044\306\055
\344\353\372\235\266\341
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Security Communication RootCA3"
#

```

```
#
Issuer: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number:00:e1:7c:37:40:fd:1b:fe:67
# Subject: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Thu Jun 16 06:17:16 2016
# Not Valid After : Mon Jan 18 06:17:16 2038
# Fingerprint (SHA-256):
24:A5:5C:2A:B0:51:44:2D:06:17:76:65:41:23:9A:4A:D0:32:D7:C5:51:75:AA:34:FF:DE:2F:BC:4F:5C:52:94
# Fingerprint (SHA1): C3:03:C8:22:74:92:E5:61:A2:9C:5F:79:91:2B:1E:44:13:91:30:3A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\341\174\067\100\375\033\376\147
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\177\060\202\003\147\240\003\002\001\002\002\011\000
\341\174\067\100\375\033\376\147\060\015\006\011\052\206\110\206
\367\015\001\001\014\005\000\060\135\061\013\060\011\006\003\125
\004\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023
\034\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163
\164\145\155\163\040\103\117\056\054\114\124\104\056\061\047\060
\045\006\003\125\004\003\023\036\123\145\143\165\162\151\164\171
\040\103\157\155\155\165\156\151\143\141\164\151\157\156\040\122
\157\157\164\103\101\063\060\036\027\015\061\066\060\066\061\066
\060\066\061\067\061\066\132\027\015\063\070\060\061\061\070\060
\066\061\067\061\066\132\060\135\061\013\060\011\006\003\125\004
```

\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023\034
\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163\164
\145\155\163\040\103\117\056\054\114\124\104\056\061\047\060\045
\006\003\125\004\003\023\036\123\145\143\165\162\151\164\171\040
\103\157\155\155\165\156\151\143\141\164\151\157\156\040\122\157
\157\164\103\101\063\060\202\002\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002
\012\002\202\002\001\000\343\311\162\111\367\060\336\011\174\251
\100\201\130\323\264\072\335\272\141\017\223\120\156\151\074\065
\302\356\133\163\220\033\147\114\041\354\137\065\273\071\076\053
\012\140\357\273\155\053\206\373\161\242\310\254\344\126\224\371
\311\257\261\162\324\040\254\164\322\270\025\255\121\376\205\164
\241\271\020\376\005\200\371\122\223\263\100\075\165\020\254\300
\226\267\247\176\166\274\343\033\122\031\316\021\037\013\004\064
\365\330\365\151\074\167\363\144\364\015\252\205\336\340\011\120
\004\027\226\204\267\310\212\274\115\162\374\034\273\317\363\006
\115\371\237\144\367\176\246\146\206\065\161\310\021\200\114\301
\161\100\130\036\276\240\163\366\374\076\120\341\340\057\046\075
\176\134\043\265\171\160\336\372\340\321\245\326\014\101\161\173
\367\352\214\034\210\307\354\213\365\321\057\125\226\106\174\132
\073\130\073\373\272\330\055\265\045\332\172\116\317\104\256\041
\246\236\230\312\040\156\174\273\210\205\133\373\300\020\142\273
\362\371\047\107\357\321\211\071\103\304\337\336\341\101\277\124
\163\040\227\055\154\332\363\324\007\243\346\271\330\157\256\374
\214\031\056\323\147\147\053\225\333\130\134\265\152\002\363\270
\203\136\264\153\276\101\176\127\011\165\104\120\125\315\132\021
\141\041\012\141\302\251\210\375\023\274\055\211\057\315\141\340
\225\276\312\265\173\341\173\064\147\013\037\266\014\307\174\036
\031\123\312\247\261\112\025\040\126\024\160\075\053\202\054\017
\235\025\035\107\200\107\377\170\231\016\061\257\157\076\217\355
\206\151\036\173\030\210\024\262\302\374\202\063\056\234\113\055
\373\160\073\161\252\053\173\046\047\363\032\302\334\373\027\270
\241\352\313\240\264\256\323\224\176\172\320\253\303\354\070\055
\021\056\210\277\324\077\255\022\073\102\254\217\002\156\175\314
\321\137\141\276\241\274\072\152\110\352\046\125\042\026\135\137
\015\377\047\063\237\030\003\164\212\133\122\040\107\153\105\115
\042\167\214\125\047\360\257\036\214\311\203\042\124\267\232\320
\117\331\316\374\331\056\034\226\050\261\002\323\003\275\045\122
\034\064\146\117\043\253\364\167\202\226\035\321\127\060\010\021
\005\375\127\321\331\307\002\003\001\000\001\243\102\060\100\060
\035\006\003\125\035\016\004\026\004\024\144\024\174\374\130\162
\026\246\012\051\064\025\157\052\313\274\374\257\250\253\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202
\002\001\000\334\002\043\010\342\357\041\072\307\015\267\046\322
\142\223\247\245\043\162\007\040\202\140\337\030\327\124\255\151
\045\222\236\331\024\317\231\271\122\201\317\256\154\212\073\132

\071\310\154\001\103\302\042\155\002\360\142\315\116\143\103\300
\024\332\364\143\360\352\364\161\356\116\207\343\161\251\364\311
\127\345\056\137\034\171\273\043\252\207\104\127\351\275\065\115
\101\273\113\050\243\230\262\033\331\013\027\007\345\367\352\235
\365\166\327\277\304\266\201\130\377\310\377\144\151\142\171\255
\156\016\037\177\356\035\151\345\267\162\161\263\376\245\001\065
\224\124\053\300\122\155\217\125\304\311\322\270\313\312\064\010
\121\205\240\365\274\264\027\130\352\012\134\172\275\143\306\072
\057\377\226\111\031\204\352\147\330\004\261\141\364\000\133\112
\267\234\161\067\031\205\171\277\201\260\307\023\016\166\161\076
\072\200\006\256\006\026\247\215\265\302\304\313\377\100\245\134
\215\245\311\072\355\162\201\312\134\230\074\322\064\003\167\010
\375\360\051\131\135\041\010\307\140\277\244\161\173\270\331\036
\202\276\011\257\145\157\050\253\277\113\265\356\076\010\107\047
\240\017\157\017\213\077\254\225\030\363\271\016\334\147\125\156
\142\236\106\016\321\004\170\312\162\256\166\331\245\370\262\337
\210\011\141\213\357\044\116\321\131\077\132\324\075\311\223\074
\053\144\365\201\015\026\226\367\222\303\376\061\157\350\052\062
\164\016\364\114\230\112\030\016\060\124\325\305\353\274\305\025
\236\350\231\041\353\047\053\011\012\333\361\346\160\030\126\273
\014\344\276\371\350\020\244\023\222\270\034\340\333\147\035\123
\003\244\042\247\334\135\222\020\074\352\377\374\033\020\032\303
\330\320\234\235\145\313\320\053\047\061\003\036\066\341\075\166
\165\014\377\105\046\271\335\121\274\043\307\137\330\330\207\020
\100\022\015\075\070\067\347\104\074\030\300\123\011\144\217\377
\325\232\246\174\160\056\163\125\041\350\337\377\203\271\035\076
\062\036\326\246\175\054\361\146\351\134\035\247\243\316\136\045
\062\053\343\225\254\052\007\316\264\050\170\206\074\055\246\235
\115\322\164\060\335\144\121\025\333\203\203\121\327\257\375\063
\235\115\146

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Security Communication RootCA3"

Issuer: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP

Serial Number:00:e1:7c:37:40:fd:1b:fe:67

Subject: CN=Security Communication RootCA3,O="SECOM Trust Systems CO.,LTD.",C=JP

Not Valid Before: Thu Jun 16 06:17:16 2016

Not Valid After : Mon Jan 18 06:17:16 2038

Fingerprint (SHA-256):

24:A5:5C:2A:B0:51:44:2D:06:17:76:65:41:23:9A:4A:D0:32:D7:C5:51:75:AA:34:FF:DE:2F:BC:4F:5C:52:94

#

Fingerprint (SHA1): C3:03:C8:22:74:92:E5:61:A2:9C:5F:79:91:2B:1E:44:13:91:30:3A

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

```

CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\303\003\310\042\164\222\345\141\242\234\137\171\221\053\036\104
\023\221\060\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\034\232\026\377\236\134\340\115\212\024\001\364\065\135\051\046
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\003\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\341\174\067\100\375\033\376\147
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "Security Communication ECC RootCA1"
#
# Issuer: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number:00:d6:5d:9b:b3:78:81:2e:eb
# Subject: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Thu Jun 16 05:15:28 2016
# Not Valid After : Mon Jan 18 05:15:28 2038
# Fingerprint (SHA-256):
E7:4F:BD:A5:5B:D5:64:C4:73:A3:6B:44:1A:A7:99:C8:A6:8E:07:74:40:E8:28:8B:9F:A1:E5:0E:4B:BA:CA:11
# Fingerprint (SHA1): B8:0E:26:A9:BF:D2:B2:3B:C0:EF:46:C9:BA:C7:BB:F6:1D:0D:41:41
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication ECC RootCA1"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040

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\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164
\103\101\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164
\103\101\061

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\011\000\326\135\233\263\170\201\056\353

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\002\070\060\202\001\276\240\003\002\001\002\002\011\000
\326\135\233\263\170\201\056\353\060\012\006\010\052\206\110\316
\075\004\003\003\060\141\061\013\060\011\006\003\125\004\006\023
\002\112\120\061\045\060\043\006\003\125\004\012\023\034\123\105
\103\117\115\040\124\162\165\163\164\040\123\171\163\164\145\155
\163\040\103\117\056\054\114\124\104\056\061\053\060\051\006\003
\125\004\003\023\042\123\145\143\165\162\151\164\171\040\103\157
\155\155\165\156\151\143\141\164\151\157\156\040\105\103\103\040
\122\157\157\164\103\101\061\060\036\027\015\061\066\060\066\061
\066\060\065\061\065\062\070\132\027\015\063\070\060\061\061\070
\060\065\061\065\062\070\132\060\141\061\013\060\011\006\003\125
\004\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023
\034\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163
\164\145\155\163\040\103\117\056\054\114\124\104\056\061\053\060
\051\006\003\125\004\003\023\042\123\145\143\165\162\151\164\171
\040\103\157\155\155\165\156\151\143\141\164\151\157\156\040\105
\103\103\040\122\157\157\164\103\101\061\060\166\060\020\006\007
\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142
\000\004\244\245\157\140\003\003\303\275\061\364\323\027\234\053
\204\165\254\345\375\075\127\156\327\143\277\346\004\211\222\216
\201\234\343\351\107\156\312\220\022\310\023\340\247\235\367\145
\164\037\154\020\262\350\344\351\357\155\205\062\231\104\261\136
\375\314\166\020\330\133\275\242\306\371\326\102\344\127\166\334
\220\302\065\251\113\210\074\022\107\155\134\377\111\117\032\112
\120\261\243\102\060\100\060\035\006\003\125\035\016\004\026\004
\024\206\034\347\376\055\245\112\213\010\376\050\021\372\276\243
\146\370\140\131\057\060\016\006\003\125\035\017\001\001\377\004

```
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075\004
\003\003\003\150\000\060\145\002\060\025\135\102\075\374\266\356
\367\073\261\066\350\236\366\304\106\050\111\063\320\130\103\052
\143\051\314\115\261\264\172\242\271\015\070\245\135\110\052\375
\313\262\163\135\243\210\010\307\014\002\061\000\300\253\055\016
\155\355\030\242\333\123\351\045\333\125\010\340\120\314\337\104
\141\026\202\253\111\260\262\201\354\163\207\170\264\114\262\142
\033\022\372\026\115\045\113\143\275\036\067\331
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "Security Communication ECC RootCA1"

Issuer: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP

Serial Number:00:d6:5d:9b:b3:78:81:2e:eb

Subject: CN=Security Communication ECC RootCA1,O="SECOM Trust Systems CO.,LTD.",C=JP

Not Valid Before: Thu Jun 16 05:15:28 2016

Not Valid After : Mon Jan 18 05:15:28 2038

Fingerprint (SHA-256):

E7:4F:BD:A5:5B:D5:64:C4:73:A3:6B:44:1A:A7:99:C8:A6:8E:07:74:40:E8:28:8B:9F:A1:E5:0E:4B:BA:CA:11

Fingerprint (SHA1):

B8:0E:26:A9:BF:D2:B2:3B:C0:EF:46:C9:BA:C7:BB:F6:1D:0D:41:41

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Security Communication ECC RootCA1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\270\016\046\251\277\322\262\073\300\357\106\311\272\307\273\366
\035\015\101\101
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\176\103\260\222\150\354\005\103\114\230\253\135\065\056\176\206
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\141\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\053\060\051\006\003\125\004\003\023
\042\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\103\103\040\122\157\157\164
\103\101\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\011\000\326\135\233\263\170\201\056\353
```

```

END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "BJCA Global Root CA1"
#
# Issuer: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Serial Number:55:6f:65:e3:b4:d9:90:6a:1b:09:d1:6c:3e:c0:6c:20
# Subject: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Not Valid Before: Thu Dec 19 03:16:17 2019
# Not Valid After : Mon Dec 12 03:16:17 2044
# Fingerprint (SHA-256):
F3:89:6F:88:FE:7C:0A:88:27:66:A7:FA:6A:D2:74:9F:B5:7A:7F:3E:98:FB:76:9C:1F:A7:B0:9C:2C:44:D5:AE
# Fingerprint (SHA1): D5:EC:8D:7B:4C:BA:79:F4:E7:E8:CB:9D:6B:AE:77:83:10:03:21:6A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BJCA Global Root CA1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\125\157\145\343\264\331\220\152\033\011\321\154\076\300
\154\040
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\164\060\202\003\134\240\003\002\001\002\002\020\125

```

\157\145\343\264\331\220\152\033\011\321\154\076\300\154\040\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\124
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\046\060
\044\006\003\125\004\012\014\035\102\105\111\112\111\116\107\040
\103\105\122\124\111\106\111\103\101\124\105\040\101\125\124\110
\117\122\111\124\131\061\035\060\033\006\003\125\004\003\014\024
\102\112\103\101\040\107\154\157\142\141\154\040\122\157\157\164
\040\103\101\061\060\036\027\015\061\071\061\062\061\071\060\063
\061\066\061\067\132\027\015\064\064\061\062\061\062\060\063\061
\066\061\067\132\060\124\061\013\060\011\006\003\125\004\006\023
\002\103\116\061\046\060\044\006\003\125\004\012\014\035\102\105
\111\112\111\116\107\040\103\105\122\124\111\106\111\103\101\124
\105\040\101\125\124\110\117\122\111\124\131\061\035\060\033\006
\003\125\004\003\014\024\102\112\103\101\040\107\154\157\142\141
\154\040\122\157\157\164\040\103\101\061\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\361\146\010\275\331
\305\025\141\313\204\004\101\245\151\067\167\035\301\260\173\372
\303\167\110\220\023\162\144\321\270\174\220\065\235\030\171\210
\343\227\001\074\107\201\362\016\242\230\015\236\077\067\340\031
\262\220\362\106\034\222\261\072\141\316\372\267\106\236\003\206
\327\063\156\355\367\105\214\166\067\336\156\226\221\367\327\176
\053\207\027\325\213\065\356\204\221\162\127\334\140\303\303\271
\347\307\147\044\043\117\143\012\143\366\146\175\113\125\247\077
\170\144\111\151\022\227\340\114\015\323\011\240\062\060\072\372
\237\300\362\234\305\022\052\056\034\265\004\063\332\244\070\021
\152\336\306\030\366\107\072\042\101\207\042\374\304\211\050\124
\330\214\245\060\012\370\027\026\312\254\067\375\171\247\221\027
\170\070\231\255\130\355\262\336\314\211\175\003\234\263\211\145
\347\343\073\261\042\206\217\006\155\170\007\375\221\022\177\260
\153\034\211\015\371\270\313\164\133\007\302\310\364\065\321\144
\143\172\351\156\232\050\326\060\275\346\033\335\025\257\204\352
\234\307\312\365\016\352\362\135\051\207\217\151\163\071\276\056
\044\157\105\041\254\305\324\151\045\006\203\255\172\110\205\023
\054\015\006\270\154\171\126\374\243\147\062\201\365\127\245\312
\127\102\151\351\134\044\141\357\342\060\030\116\104\230\125\157
\172\302\223\330\031\266\336\174\107\212\021\116\111\107\333\050
\224\002\013\224\112\054\371\022\320\117\350\061\176\154\172\277
\246\077\233\071\075\002\026\243\030\263\147\254\133\077\054\203
\053\147\071\201\134\271\176\224\325\144\335\236\217\156\256\350
\174\133\264\327\152\107\110\327\176\263\324\055\216\126\166\116
\317\151\361\156\104\154\324\044\352\215\044\241\030\277\275\127
\376\251\231\065\265\333\020\167\270\075\110\272\326\301\347\361
\043\076\327\337\205\235\047\074\324\100\275\012\014\275\365\347
\215\045\326\201\164\207\106\324\051\165\242\102\154\367\163\211
\347\175\277\172\112\037\323\042\311\025\125\317\337\157\174\125
\320\244\213\007\021\067\137\203\246\046\127\246\001\133\176\376
\130\150\007\251\351\172\331\271\350\377\120\037\253\302\264\300

\316\350\352\375\017\275\215\115\270\274\161\002\003\001\000\001
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\305
\357\355\314\330\215\041\306\110\344\343\327\024\056\247\026\223
\345\230\001\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\002\001\000\122\202\254\041\064\037\043\362
\242\330\371\270\257\067\066\040\211\321\067\003\326\151\237\270
\141\020\272\242\061\230\131\107\350\321\015\045\036\025\101\014
\340\052\125\325\127\122\313\370\344\307\151\243\035\115\161\002
\136\137\041\105\140\110\134\011\216\111\020\301\004\334\251\142
\153\002\360\103\310\116\235\070\111\164\311\062\160\124\155\301
\107\374\216\264\066\236\324\234\275\335\040\326\123\311\030\251
\265\126\271\166\213\225\147\146\356\275\230\376\256\357\276\156
\373\140\366\375\131\306\052\033\077\043\112\224\044\060\047\310
\211\274\353\104\044\232\313\075\276\117\325\172\316\216\027\313
\142\301\331\336\036\016\172\377\103\206\064\122\274\141\077\074
\137\273\331\166\264\123\274\227\263\376\212\114\022\056\053\363
\327\316\341\242\377\335\173\160\373\073\241\115\244\143\002\375
\070\227\225\077\005\160\240\153\337\142\201\103\213\264\131\015
\112\214\124\234\305\273\201\237\315\175\245\357\013\045\036\072
\040\333\034\374\037\230\147\002\012\324\163\104\023\333\121\204
\032\125\003\126\340\000\176\164\006\377\070\304\162\035\323\250
\077\150\061\135\323\011\307\056\214\133\143\340\350\334\036\322
\354\141\036\362\336\345\357\366\231\166\140\055\036\224\162\161
\306\013\052\062\307\222\116\325\106\327\035\371\251\031\012\310
\372\225\316\155\043\230\252\013\070\255\232\126\015\157\215\361
\061\000\210\301\027\234\315\031\066\065\376\125\123\240\340\074
\063\137\226\136\342\062\351\337\063\273\006\112\251\330\204\163
\316\167\322\306\254\161\341\134\243\035\014\273\012\337\137\342
\243\161\330\332\067\132\240\170\053\364\324\175\353\166\355\362
\141\160\245\145\232\323\211\064\030\253\373\162\076\327\264\075
\171\134\330\037\241\063\173\331\202\120\014\223\027\252\154\334
\302\202\273\002\127\066\257\230\047\052\071\120\341\260\211\365
\045\227\176\107\150\020\264\354\163\312\263\227\321\044\334\366
\142\240\050\323\265\243\270\144\267\210\142\102\317\235\123\315
\231\276\144\150\217\117\036\022\110\367\322\051\303\230\050\312
\362\062\013\223\214\051\117\074\140\062\315\005\226\141\354\362
\257\376\263\160\054\056\246\362

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "BJCA Global Root CA1"

Issuer: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN

Serial Number:55:6f:65:e3:b4:d9:90:6a:1b:09:d1:6c:3e:c0:6c:20

```
# Subject: CN=BJCA Global Root CA1,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Not Valid Before: Thu Dec 19 03:16:17
2019
# Not Valid After : Mon Dec 12 03:16:17 2044
# Fingerprint (SHA-256):
F3:89:6F:88:FE:7C:0A:88:27:66:A7:FA:6A:D2:74:9F:B5:7A:7F:3E:98:FB:76:9C:1F:A7:B0:9C:2C:44:D5:AE
# Fingerprint (SHA1): D5:EC:8D:7B:4C:BA:79:F4:E7:E8:CB:9D:6B:AE:77:83:10:03:21:6A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BJCA Global Root CA1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\325\354\215\173\114\272\171\364\347\350\313\235\153\256\167\203
\020\003\041\152
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\102\062\231\166\103\063\066\044\065\007\202\233\050\371\320\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\125\157\145\343\264\331\220\152\033\011\321\154\076\300
\154\040
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

#
# Certificate "BJCA Global Root CA2"
#
# Issuer: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Serial Number:2c:17:08:7d:64:2a:c0:fe:85:18:59:06:cf:b4:4a:eb
# Subject: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN
# Not Valid Before: Thu Dec 19 03:18:21 2019
# Not Valid After : Mon Dec 12 03:18:21 2044
# Fingerprint (SHA-256):
57:4D:F6:93:1E:27:80:39:66:7B:72:0A:FD:C1:60:0F:C2:7E:B6:6D:D3:09:29:79:FB:73:85:64:87:21:28:82
# Fingerprint (SHA1): F4:27:86:EB:6E:B8:6D:88:31:67:02:FB:BA:66:A4:53:00:AA:7A:A6
```



```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BJCA Global Root CA2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\054\027\010\175\144\052\300\376\205\030\131\006\317\264
\112\353
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\002\045\060\202\001\253\240\003\002\001\002\002\020\054
\027\010\175\144\052\300\376\205\030\131\006\317\264\112\353\060
\012\006\010\052\206\110\316\075\004\003\003\060\124\061\013\060
\011\006\003\125\004\006\023\002\103\116\061\046\060\044\006\003
\125\004\012\014\035\102\105\111\112\111\116\107\040\103\105\122
\124\111\106\111\103\101\124\105\040\101\125\124\110\117\122\111
\124\131\061\035\060\033\006\003\125\004\003\014\024\102\112\103
\101\040\107\154\157\142\141\154\040\122\157\157\164\040\103\101
\062\060\036\027\015\061\071\061\062\061\071\060\063\061\070\062
\061\132\027\015\064\064\061\062\061\062\060\063\061\070\062\061
\132\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116
\061\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111
\116\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101
\125\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004
\003\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122
\157\157\164\040\103\101\062\060\166\060\020\006\007\052\206\110
\316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\235
\313\200\221\215\123\147\265\271\120\261\003\370\345\111\037\101
```

```
\042\011\260\121\122\130\326\053\064\217\305\022\106\024\305\213
\057\054\204\377\054\156\250\325\361\011\343\003\041\024\304\103
\075\174\301\054\304\113\152\112\315\351\207\340\175\366\042\276
\372\112\121\270\060\212\375\341\336\030\022\012\366\107\267\347
\027\277\047\212\324\101\114\226\074\140\226\301\375\025\034\243
\102\060\100\060\035\006\003\125\035\016\004\026\004\024\322\112
\261\121\177\006\360\321\202\037\116\156\137\253\203\374\110\324
\260\221\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003
\150\000\060\145\002\060\032\274\133\327\376\251\322\124\016\112
\135\322\155\261\100\334\364\103\325\322\112\231\031\022\126\200
\367\203\064\341\065\116\110\155\004\017\127\061\060\060\055\261
\252\235\003\070\333\006\002\061\000\313\314\207\123\313\172\337
\040\121\163\220\300\250\133\141\320\305\120\071\375\205\376\301
\343\170\370\246\326\113\275\233\207\217\017\345\326\123\226\253
\074\310\100\332\141\367\123\243\367
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_TRUE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Trust for "BJCA Global Root CA2"

Issuer: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN

Serial Number:2c:17:08:7d:64:2a:c0:fe:85:18:59:06:cf:b4:4a:eb

Subject: CN=BJCA Global Root CA2,O=BEIJING CERTIFICATE AUTHORITY,C=CN

Not Valid Before: Thu Dec 19 03:18:21 2019

Not Valid After : Mon Dec 12 03:18:21 2044

Fingerprint (SHA-256):

57:4D:F6:93:1E:27:80:39:66:7B:72:0A:FD:C1:60:0F:C2:7E:B6:6D:D3:09:29:79:FB:73:85:64:87:21:28:82

Fingerprint (SHA1): F4:27:86:EB:6E:B8:6D:88:31:67:02:FB:BA:66:A4:53:00:AA:7A:A6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN

CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "BJCA Global Root CA2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\364\047\206\353\156\270\155\210\061\147\002\373\272\146\244\123
\000\252\172\246
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\136\012\366\107\137\246\024\350\021\001\225\077\115\001\353\074
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\124\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\046\060\044\006\003\125\004\012\014\035\102\105\111\112\111\116
```

```
\107\040\103\105\122\124\111\106\111\103\101\124\105\040\101\125
\124\110\117\122\111\124\131\061\035\060\033\006\003\125\004\003
\014\024\102\112\103\101\040\107\154\157\142\141\154\040\122\157
\157\164\040\103\101\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\054\027\010\175\144\052\300\376\205\030\131\006\317\264
\112\353
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST

CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "CAEDICOM Root"

Issuer: C=ES,O=EDICOM,CN=CAEDICOM Root

Serial Number:fb:71:26:58:ad:99:e5

Subject: C=ES,O=EDICOM,CN=CAEDICOM Root

Not Valid Before: Wed May 21 11:06:35 2014

Not Valid After: Sun May 21 10:20:00 2034

Fingerprint (MD5): cd:d5:a1:fe:28:31:9c:13:be:d5:c1:e8:cf:56:f0:76

Fingerprint (SHA1): 55:9b:ba:7b:0f:fe:80:d6:d3:82:9b:1f:d0:7a:a4:d3:22:19:47:90

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CAEDICOM Root"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
```

END

CKA_ID UTF8 "0"

CKA_ISSUER

MULTILINE_OCTAL

```
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\010\000\373\161\046\130\255\231\345
```

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\121\060\202\003\071\240\003\002\001\002\002\010\000
\373\161\046\130\255\231\345\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\066\061\026\060\024\006\003\125\004
\003\014\015\103\101\105\104\111\103\117\115\040\122\157\157\164
\061\017\060\015\006\003\125\004\012\014\006\105\104\111\103\117
\115\061\013\060\011\006\003\125\004\006\023\002\105\123\060\036
\027\015\061\064\060\065\062\061\061\061\060\066\063\065\132\027
\015\063\064\060\065\062\061\061\060\062\060\060\060\132\060\066
\061\026\060\024\006\003\125\004\003\014\015\103\101\105\104\111
\103\117\115\040\122\157\157\164\061\017\060\015\006\003\125\004
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125
\004\006\023\002\105\123\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\333\200\312\350\111\164\307\323\070
\056\361\305\043\142\374\066\214\057\036\176\071\013\351\006\364
\125\233\245\230\051\224\355\206\107\062\203\363\305\222\172\005
\327\051\002\076\026\303\050\177\065\144\051\172\171\273\241\342
\036\141\024\215\347\000\320\334\242\124\145\212\337\151\271\161
\107\177\070\070\026\106\247\151\061\021\065\114\341\052\177\377
\155\117\225\075\343\135\110\115\031\123\010\132\153\041\325\022
\060\151\227\220\257\055\301\365\177\101\137\111\066\217\115\270
\036\032\225\137\332\017\157\134\025\065\304\021\274\137\205\233
\275\255\073\125\136\273\337\316\273\257\134\231\140\335\037\151
\032\111\110\041\371\011\012\317\162\247\360\362\336\345\170\031
\276\022\335\315\207\171\101\316\057\105\327\013\221\020\021\004
\036\022\235\362\070\003\137\026\151\256\240\012\332\300\371\353
\240\015\030\017\171\136\221\235\344\037\024\234\064\023\031\002
\104\272\121\303\356\171\262\140\024\243\257\274\110\055\050\070
\150\001\103\144\312\016\206\203\142\320\212\031\246\047\361\053
\173\113\051\041\133\232\314\150\102\020\310\113\117\017\043\262
\210\174\304\134\156\027\160\305\167\257\225\300\045\244\042\012
\323\174\371\330\162\310\320\055\275\247\350\322\055\213\114\241
\156\012\374\264\100\063\273\232\153\374\244\352\311\376\340\064
\210\103\314\306\274\077\165\322\245\251\257\372\227\271\076\267
\316\124\240\115\300\135\056\301\050\330\143\124\162\270\254\132
\365\072\373\040\141\006\072\364\240\053\070\253\314\203\014\111
\324\156\076\155\017\076\163\057\066\346\363\117\263\300\000\321
\105\111\133\214\366\243\230\035\204\177\231\012\303\352\012\074
\303\323\044\170\110\147\365\033\073\016\035\016\103\261\004\165
\301\240\071\166\213\366\331\002\245\035\341\236\133\007\273\066
\127\112\041\115\371\211\151\264\154\017\327\257\240\025\044\231
\347\370\327\123\224\354\022\277\244\245\327\355\356\216\065\167
\167\334\246\177\040\124\222\326\143\326\162\236\115\052\266\217
\163\363\031\241\304\260\037\346\064\243\013\000\076\227\111\047
\141\252\252\004\101\063\070\265\120\121\314\066\025\333\037\377
\275\312\110\203\110\247\263\002\003\001\000\001\243\143\060\141
\060\035\006\003\125\035\016\004\026\004\024\024\315\052\131\170
\143\253\141\031\350\270\075\241\340\132\300\165\347\371\313\060

\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\037\006\003\125\035\043\004\030\060\026\200\024\024\315\052
\131\170\143\253\141\031\350\270\075\241\340\132\300\165\347\371
\313\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\003\202\002\001\000\075\011\031\000\266\221\002\154\354\016\367
\341\342\142\260\277\063\015\375\125\022\364\010\232\367\053\055
\256\367\234\107\330\037\006\001\023\265\216\347\262\202\013\075
\204\131\103\324\007\330\053\134\020\172\044\054\312\215\350\325
\243\071\234\061\314\353\340\072\341\325\277\317\307\207\173\140
\377\107\071\327\243\104\326\010\046\133\317\132\124\354\210\323
\216\017\171\074\310\243\117\246\302\216\047\360\336\022\256\136
\031\255\347\042\126\212\130\062\340\371\006\320\251\052\264\065
\233\014\206\046\121\000\224\107\120\374\245\304\045\141\371\130
\360\105\160\056\111\166\177\021\326\157\265\371\051\005\341\015
\303\116\130\037\257\035\354\067\320\112\371\006\006\201\323\333
\240\226\270\016\221\060\171\346\120\337\210\270\013\251\134\324
\007\364\311\250\314\175\217\223\143\011\144\000\005\052\150\146
\103\273\242\273\376\225\256\371\304\245\012\210\142\110\170\045
\174\052\077\021\144\246\323\042\040\107\235\062\326\362\343\310
\244\141\164\347\202\302\104\272\240\321\135\137\274\361\104\016
\203\117\034\120\205\304\351\347\154\374\346\270\125\341\242\032
\200\267\220\104\247\204\042\227\107\042\336\253\070\067\317\265
\362\034\076\102\160\273\165\266\145\050\153\313\177\202\065\252
\366\363\040\170\050\163\007\226\060\160\245\052\161\134\241\171
\244\026\271\106\075\136\264\000\111\205\211\323\016\337\201\256
\130\215\130\326\341\305\104\170\056\034\040\273\242\107\227\277
\166\024\073\251\050\217\237\013\165\322\241\074\355\053\307\216
\220\241\172\242\231\060\142\374\205\035\065\163\073\363\265\131
\042\033\315\010\261\014\235\165\152\333\205\073\016\207\237\062
\117\222\000\001\001\114\111\150\202\200\101\154\371\375\161\275
\213\364\170\012\140\243\236\261\122\035\300\212\343\236\305\277
\053\031\152\230\247\261\336\025\120\237\252\224\045\217\251\200
\202\247\162\272\111\144\011\047\141\053\156\274\043\050\063\135
\236\156\360\271\275\040\062\214\335\240\013\231\273\264\204\004
\044\165\051\226\367\247\245\027\270\121\005\353\164\255\121\171
\226\374\273\373\337\011\055\010\222\104\316\300\322\263\030\307
\024\042\277\041\361

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "CAEDICOM Root"

Issuer: C=ES,O=EDICOM,CN=CAEDICOM Root

```

# Serial Number:fb:71:26:58:ad:99:e5
# Subject: C=ES,O=EDICOM,CN=CAEDICOM Root
# Not Valid Before: Wed May 21 11:06:35 2014
# Not Valid After: Sun May 21 10:20:00 2034
# Fingerprint (MD5): cd:d5:a1:fe:28:31:9c:13:be:d5:c1:e8:cf:56:f0:76
# Fingerprint (SHA1): 55:9b:ba:7b:0f:fe:80:d6:d3:82:9b:1f:d0:7a:a4:d3:22:19:47:90
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CAEDICOM Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\125\233\272\173\017\376\200\326\323\202\233\037\320\172\244\323
\042\031\107\220
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\315\325\241\376\050\061\234\023\276\325\301\350\317\126\360\166
END
CKA_ISSUER MULTILINE_OCTAL
\060\066\061\026\060\024\006\003\125\004\003\014\015\103\101\105
\104\111\103\117\115\040\122\157\157\164\061\017\060\015\006\003
\125\004\012\014\006\105\104\111\103\117\115\061\013\060\011\006
\003\125\004\006\023\002\105\123
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\000\373\161\046\130\255\231\345
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Symantec Enterprise Mobile Root for Microsoft"
# Issuer: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US
# Serial Number:0f:6b:55:2f:9e:bf:90:7b:0f:66:29:a9:bd:f4:d8:ce
# Subject: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US
# Not Valid Before: Thu Mar 15 00:00:00 2012
# Not Valid After: Sun Mar 14 23:59:59 2032
# Fingerprint (MD5): 71:d0:a5:ff:2d:59:74:16:94:be:e3:7d:1e:5c:86:0b
# Fingerprint (SHA1): 92:b4:6c:76:e1:30:54:e1:04:f2:30:51:7e:6e:50:4d:43:ab:10:b5
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Enterprise Mobile Root for Microsoft"

```

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164
\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061\066
\060\064\006\003\125\004\003\023\055\123\171\155\141\156\164\145
\143\040\105\156\164\145\162\160\162\151\163\145\040\115\157\142
\151\154\145\040\122\157\157\164\040\146\157\162\040\115\151\143
\162\157\163\157\146\164

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164
\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061\066
\060\064\006\003\125\004\003\023\055\123\171\155\141\156\164\145
\143\040\105\156\164\145\162\160\162\151\163\145\040\115\157\142
\151\154\145\040\122\157\157\164\040\146\157\162\040\115\151\143
\162\157\163\157\146\164

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\017\153\125\057\236\277\220\173\017\146\051\251\275\364
\330\316

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\275\060\202\002\245\240\003\002\001\002\002\020\017
\153\125\057\236\277\220\173\017\146\051\251\275\364\330\316\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\144
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035\060
\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145\143
\040\103\157\162\160\157\162\141\164\151\157\156\061\066\060\064
\006\003\125\004\003\023\055\123\171\155\141\156\164\145\143\040
\105\156\164\145\162\160\162\151\163\145\040\115\157\142\151\154
\145\040\122\157\157\164\040\146\157\162\040\115\151\143\162\157
\163\157\146\164\060\036\027\015\061\062\060\063\061\065\060\060
\060\060\060\060\132\027\015\063\062\060\063\061\064\062\063\065
\071\065\071\132\060\144\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\035\060\033\006\003\125\004\012\023\024\123\171
\155\141\156\164\145\143\040\103\157\162\160\157\162\141\164\151
\157\156\061\066\060\064\006\003\125\004\003\023\055\123\171\155
\141\156\164\145\143\040\105\156\164\145\162\160\162\151\163\145
\040\115\157\142\151\154\145\040\122\157\157\164\040\146\157\162
\040\115\151\143\162\157\163\157\146\164\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\265\075\260\162\356
\221\351\245\151\234\021\115\172\371\263\372\075\362\224\233\043
\267\246\003\354\142\030\374\205\022\042\376\301\161\175\124\223

\271\221\175\142\366\312\250\070\025\145\370\167\075\345\202\040
\072\324\265\321\156\215\006\111\275\337\202\016\044\205\347\357
\170\055\030\362\340\013\150\106\076\044\020\310\127\356\016\155
\161\246\323\261\126\034\327\051\325\262\352\124\005\012\250\074
\241\270\045\122\007\005\240\337\347\334\356\134\073\101\265\253
\134\063\062\322\316\353\351\226\370\100\364\012\272\063\035\370
\126\003\011\202\365\147\007\304\300\064\301\135\374\105\273\352
\074\232\325\164\161\155\325\206\323\302\374\205\274\124\353\243
\325\362\117\325\105\257\127\274\360\042\300\217\242\105\310\165
\064\167\336\241\155\067\162\263\163\215\014\153\123\272\131\341
\250\076\200\127\322\137\131\356\150\165\317\201\234\243\312\105
\214\067\333\005\162\064\034\062\002\370\325\371\054\015\332\130
\236\304\027\264\233\311\220\304\210\131\077\161\221\220\104\030
\276\042\213\171\222\056\102\260\213\227\133\002\003\001\000\001
\243\153\060\151\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\047\006\003\125\035\021\004\040\060\036
\244\034\060\032\061\030\060\026\006\003\125\004\003\023\017\115
\120\113\111\055\062\060\064\070\055\061\055\061\061\061\060\035
\006\003\125\035\016\004\026\004\024\115\354\337\046\006\334\044
\020\300\266\231\364\327\071\307\157\031\370\046\050\060\015\006
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001
\000\251\127\131\320\001\124\024\106\257\307\171\124\014\152\052
\133\330\072\035\201\344\210\243\061\264\361\363\065\361\106\163
\134\103\311\376\274\242\152\031\300\275\057\137\313\070\243\155
\156\350\024\136\362\170\176\105\172\341\273\364\056\233\105\353
\340\035\120\034\064\133\177\230\212\206\017\207\332\344\144\046
\167\374\011\337\043\101\117\016\237\372\016\372\104\205\360\051
\227\244\224\342\364\100\055\221\034\166\364\250\140\336\161\246
\260\005\342\117\151\331\031\013\211\072\340\372\253\053\372\361
\263\062\355\374\174\160\145\136\320\173\021\173\235\350\133\032
\112\166\244\173\121\071\254\175\251\014\164\070\350\273\125\337
\304\316\300\247\041\132\270\033\237\001\305\247\020\376\175\371
\152\010\231\001\321\366\065\120\070\344\366\103\344\030\330\200
\114\354\307\004\342\141\214\175\111\355\317\264\245\361\362\220
\222\011\010\065\163\240\043\062\312\351\234\236\034\276\013\007
\054\167\136\027\114\332\234\202\341\200\033\245\363\332\367\210
\277\277\071\047\370\044\376\261\113\310\227\355\344\022\024\045
\210

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Symantec Enterprise Mobile Root for Microsoft"

Issuer: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US


```
# Serial Number:0f:6b:55:2f:9e:bf:90:7b:0f:66:29:a9:bd:f4:d8:ce
# Subject: CN=Symantec Enterprise Mobile Root for Microsoft,O=Symantec Corporation,C=US
# Not Valid Before: Thu Mar 15 00:00:00 2012
# Not Valid After: Sun Mar 14 23:59:59 2032
# Fingerprint (MD5): 71:d0:a5:ff:2d:59:74:16:94:be:e3:7d:1e:5c:86:0b
# Fingerprint (SHA1): 92:b4:6c:76:e1:30:54:e1:04:f2:30:51:7e:6e:50:4d:43:ab:10:b5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Enterprise Mobile Root for Microsoft"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\222\264\154\166\341\060\124\341\004\362\060\121\176\156\120\115
\103\253\020\265
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\161\320\245\377\055\131\164\026\224\276\343\175\036\134\206\013
END
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164
\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061\066
\060\064\006\003\125\004\003\023\055\123\171\155\141\156\164\145
\143\040\105\156\164\145\162\160\162\151\163\145\040\115\157\142
\151\154\145\040\122\157\157\164\040\146\157\162\040\115\151\143
\162\157\163\157\146\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\017\153\125\057\236\277\220\173\017\146\051\251\275\364
\330\316
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "I.CA Root CA/RSA"
# Issuer: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita\, a.s.,C=CZ
# Serial Number:05:f5:e1:00
# Subject: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita\, a.s.,C=CZ
# Not Valid Before: Wed May 27 12:20:00 2015
# Not Valid After: Sun May 27 12:20:00 2040
# Fingerprint (MD5): 34:ba:8d:c4:33:9a:b5:27:ee:bd:5b:7c:7d:82:97:7f
# Fingerprint (SHA1): 9b:09:59:89:81:54:08:1b:f6:a9:0e:9b:9e:58:a4:69:0c:9b:a1:04
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA Root CA/RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063
\071\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063
\071\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\005\365\341\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\176\060\202\004\146\240\003\002\001\002\002\004\005
\365\341\000\060\015\006\011\052\206\110\206\367\015\001\001\015
\005\000\060\160\061\013\060\011\006\003\125\004\006\023\002\103
\132\061\055\060\053\006\003\125\004\012\014\044\120\162\166\156
\303\255\040\143\145\162\164\151\146\151\153\141\304\215\156\303
\255\040\141\165\164\157\162\151\164\141\054\040\141\056\163\056
\061\031\060\027\006\003\125\004\003\014\020\111\056\103\101\040
\122\157\157\164\040\103\101\057\122\123\101\061\027\060\025\006
\003\125\004\005\023\016\116\124\122\103\132\055\062\066\064\063
\071\063\071\065\060\036\027\015\061\065\060\065\062\067\061\062
\062\060\060\060\132\027\015\064\060\060\065\062\067\061\062\062
\060\060\060\132\060\160\061\013\060\011\006\003\125\004\006\023
\002\103\132\061\055\060\053\006\003\125\004\012\014\044\120\162
\166\156\303\255\040\143\145\162\164\151\146\151\153\141\304\215
\156\303\255\040\141\165\164\157\162\151\164\141\054\040\141\056
\163\056\061\031\060\027\006\003\125\004\003\014\020\111\056\103
\101\040\122\157\157\164\040\103\101\057\122\123\101\061\027\060
```

\025\006\003\125\004\005\023\016\116\124\122\103\132\055\062\066
\064\063\071\063\071\065\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\252\077\125\265\211\257\166\024\006
\052\144\046\224\070\017\137\366\334\004\157\061\105\365\012\375
\073\177\233\162\157\370\100\174\376\135\375\064\231\005\070\224
\111\272\261\360\275\370\231\134\300\121\372\252\015\373\346\161
\025\205\143\021\052\167\006\221\222\006\210\263\374\024\341\231
\106\264\051\202\256\204\203\356\265\046\207\156\370\213\125\104
\235\100\330\377\052\132\252\350\177\322\145\341\024\107\302\174
\061\375\165\141\012\033\214\200\112\236\264\342\056\024\107\061
\356\274\005\121\256\246\176\317\021\270\305\110\275\005\124\302
\204\344\247\150\153\370\270\372\176\050\311\271\317\344\041\117
\145\311\210\150\240\070\331\165\245\021\073\114\034\156\113\036
\324\206\154\301\255\005\107\323\054\224\015\314\207\055\032\055
\303\326\314\336\204\376\354\153\300\341\043\023\241\323\234\030
\176\340\162\327\134\125\274\114\263\100\061\033\234\100\315\232
\353\200\016\161\256\327\142\156\132\026\117\037\366\145\105\321
\237\172\205\101\031\302\172\072\316\041\222\344\224\160\114\273
\250\101\306\304\273\065\315\365\072\236\143\251\215\240\152\321
\040\104\252\052\266\110\245\162\303\316\236\344\130\110\107\011
\177\002\101\363\015\034\155\011\170\360\327\024\321\240\125\374
\021\326\132\032\000\171\345\073\346\010\313\122\236\244\011\253
\153\347\154\234\052\057\042\175\373\271\120\262\336\120\323\057
\014\162\271\326\263\267\263\010\346\353\173\254\364\264\305\366
\301\062\037\247\031\041\365\334\136\067\252\307\037\123\233\103
\076\346\236\237\332\015\327\126\242\017\123\151\055\125\277\353
\206\170\021\277\246\327\132\115\363\016\223\163\352\377\016\320
\347\217\361\310\263\360\330\030\163\154\245\162\210\361\160\114
\107\124\266\233\132\321\274\046\067\215\030\337\233\153\056\333
\013\045\263\212\262\343\255\006\134\155\273\175\027\003\007\001
\212\060\227\211\164\155\112\224\167\056\353\356\317\260\036\265
\352\166\364\265\024\070\225\327\325\331\057\077\262\244\046\314
\115\243\134\215\011\363\136\014\205\062\316\126\154\002\010\361
\113\243\253\277\310\124\240\005\205\164\344\165\035\172\274\234
\073\140\075\152\375\031\221\002\003\001\000\001\243\202\001\036
\060\202\001\032\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024
\166\271\003\110\373\325\030\241\241\067\240\355\314\150\202\114
\122\064\066\015\060\201\327\006\003\125\035\040\004\201\317\060
\201\314\060\201\311\006\004\125\035\040\000\060\201\300\060\201
\275\006\010\053\006\001\005\005\007\002\002\060\201\260\032\201
\255\124\145\156\164\157\040\153\166\141\154\151\146\151\153\157
\166\141\156\171\040\163\171\163\164\145\155\157\166\171\040\143
\145\162\164\151\146\151\153\141\164\040\142\171\154\040\166\171
\144\141\156\040\160\157\144\154\145\040\172\141\153\157\156\141
\040\062\062\067\057\062\060\060\060\040\123\142\056\040\166\040

\160\154\141\164\156\145\155\040\172\156\145\156\151\057\124\150
\151\163\040\161\165\141\154\151\146\151\145\144\040\163\171\163
\164\145\155\040\143\145\162\164\151\146\151\143\141\164\145\040
\167\141\163\040\151\163\163\165\145\144\040\141\143\143\157\162
\144\151\156\147\040\164\157\040\101\143\164\040\116\157\056\040
\062\062\067\057\062\060\060\060\040\103\157\154\154\056\060\015
\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202\002
\001\000\031\124\002\045\203\333\042\226\213\035\225\236\231\333
\064\316\223\320\037\056\173\134\140\044\152\014\327\205\104\170
\037\034\111\362\024\370\203\124\031\246\235\062\146\270\043\246
\073\206\052\237\066\374\027\374\120\017\140\306\067\375\044\250
\367\171\247\216\277\330\007\025\124\136\122\014\276\370\246\330
\310\101\104\361\366\023\334\203\031\133\257\335\144\367\063\026
\207\017\025\132\361\144\274\324\347\125\077\062\070\211\232\363
\314\110\305\154\061\161\222\232\046\027\302\174\107\002\155\065
\047\237\363\032\341\252\035\015\164\021\251\223\174\101\250\157
\273\216\234\305\001\344\163\366\272\120\056\346\020\324\274\157
\023\232\070\271\151\106\245\006\326\362\114\154\067\253\074\370
\333\032\306\125\360\310\370\035\041\156\057\000\152\261\342\155
\132\004\055\175\335\011\117\366\357\024\057\300\022\352\011\031
\053\032\312\240\161\233\261\072\062\274\377\103\030\363\175\057
\365\056\210\351\121\266\361\111\220\114\377\046\307\303\131\335
\164\137\301\120\135\070\134\235\150\125\151\152\264\100\167\311
\137\062\051\110\124\223\301\263\041\043\166\241\125\060\151\043
\077\061\111\304\241\315\073\166\131\225\132\202\264\255\161\265
\276\246\221\314\200\025\112\057\316\224\256\030\125\111\165\040
\104\270\363\001\233\301\170\054\216\020\114\247\144\255\255\072
\353\114\035\126\056\177\224\324\036\320\012\325\311\124\201\016
\036\376\367\224\371\141\072\077\065\356\323\140\311\373\110\262
\156\302\331\276\172\156\230\005\160\000\243\321\027\307\306\064
\257\154\365\115\217\135\122\014\335\200\233\172\155\347\230\343
\071\205\134\077\213\314\104\242\100\066\062\223\022\126\220\002
\236\076\131\150\002\037\126\210\036\257\301\376\017\173\125\215
\227\331\273\246\223\107\272\174\370\107\266\071\327\214\362\100
\154\207\234\014\376\055\335\334\161\374\016\221\010\244\103\075
\212\127\335\335\007\353\247\227\121\320\272\204\231\255\213\171
\376\311\004\220\203\023\053\351\227\015\145\211\362\021\055\067
\216\113\270\273\322\172\071\052\305\334\320\135\015\335\004\047
\230\237\130\375\216\206\273\005\177\360\355\067\222\220\335\234
\275\374

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "I.CA Root CA/RSA"

```

# Issuer: 2.5.4.5=NTRCZ-26439395,CN=I.CA
Root CA/RSA,O=První certifikační autorita, a.s.,C=CZ
# Serial Number:05:f5:e1:00
# Subject: 2.5.4.5=NTRCZ-26439395,CN=I.CA Root CA/RSA,O=První certifikační autorita, a.s.,C=CZ
# Not Valid Before: Wed May 27 12:20:00 2015
# Not Valid After: Sun May 27 12:20:00 2040
# Fingerprint (MD5): 34:ba:8d:c4:33:9a:b5:27:ee:bd:5b:7c:7d:82:97:7f
# Fingerprint (SHA1): 9b:09:59:89:81:54:08:1b:f6:a9:0e:9b:9e:58:a4:69:0c:9b:a1:04
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA Root CA/RSA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\233\011\131\211\201\124\010\033\366\251\016\233\236\130\244\151
\014\233\241\004
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\064\272\215\304\063\232\265\047\356\275\133\174\175\202\227\177
END
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\055\060\053\006\003\125\004\012\014\044\120\162\166\156\303\255
\040\143\145\162\164\151\146\151\153\141\304\215\156\303\255\040
\141\165\164\157\162\151\164\141\054\040\141\056\163\056\061\031
\060\027\006\003\125\004\003\014\020\111\056\103\101\040\122\157
\157\164\040\103\101\057\122\123\101\061\027\060\025\006\003\125
\004\005\023\016\116\124\122\103\132\055\062\066\064\063\071\063
\071\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\005\365\341\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "MULTICERT Root Certification Authority 01"
# Issuer: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação
Electrónica S.A.,C=PT
# Serial Number:54:4d:a5:bc:40:35:56:5a
# Subject: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação
Electrónica S.A.,C=PT
# Not Valid Before: Fri Apr 04 08:59:47

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2014

Not Valid After: Mon Apr 04 08:59:47 2039

Fingerprint (MD5): 30:b4:c2:a5:23:02:1d:2e:1b:c0:59:f2:ca:23:99:20

Fingerprint (SHA1): 46:af:7a:31:b5:99:46:0d:46:9d:60:41:14:5b:13:65:1d:f9:17:0a

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "MULTICERT Root Certification Authority 01"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\060\061

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\060\061

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\010\124\115\245\274\100\065\126\132

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\361\060\202\003\331\240\003\002\001\002\002\010\124
\115\245\274\100\065\126\132\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\201\205\061\013\060\011\006\003\125
\004\006\023\002\120\124\061\102\060\100\006\003\125\004\012\014
\071\115\125\114\124\111\103\105\122\124\040\055\040\123\145\162
\166\151\303\247\157\163\040\144\145\040\103\145\162\164\151\146
\151\143\141\303\247\303\243\157\040\105\154\145\143\164\162\303
\263\156\151\143\141\040\123\056\101\056\061\062\060\060\006\003
\125\004\003\014\051\115\125\114\124\111\103\105\122\124\040\122
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157

\156\040\101\165\164\150\157\162\151\164\171\040\060\061\060\036
\027\015\061\064\060\064\060\064\060\070\065\071\064\067\132\027
\015\063\071\060\064\060\064\060\070\065\071\064\067\132\060\201
\205\061\013\060\011\006\003\125\004\006\023\002\120\124\061\102
\060\100\006\003\125\004\012\014\071\115\125\114\124\111\103\105
\122\124\040\055\040\123\145\162\166\151\303\247\157\163\040\144
\145\040\103\145\162\164\151\146\151\143\141\303\247\303\243\157
\040\105\154\145\143\164\162\303\263\156\151\143\141\040\123\056
\101\056\061\062\060\060\006\003\125\004\003\014\051\115\125\114
\124\111\103\105\122\124\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\060\061\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\316\334\077\364\031\156\273\025\151
\206\364\344\315\347\072\160\073\307\232\213\073\203\000\201\133
\373\040\026\132\276\277\130\000\137\051\346\127\157\176\212\054
\025\007\134\032\143\214\102\137\026\335\332\211\204\105\127\027
\226\240\234\241\165\042\101\032\072\375\305\027\221\023\366\276
\142\012\274\156\045\055\133\300\214\020\146\367\342\326\373\334
\110\061\243\032\250\345\115\110\311\242\034\163\376\217\146\100
\143\167\131\007\074\075\024\237\324\367\205\221\320\303\102\365
\033\141\263\167\200\200\052\155\022\002\226\213\121\331\301\157
\047\013\032\007\064\000\377\322\131\114\051\350\327\031\143\330
\221\264\077\374\216\016\045\362\241\022\007\145\312\065\336\253
\376\026\243\010\214\257\177\176\022\364\131\026\005\037\350\255
\164\171\062\367\170\002\266\264\314\253\333\036\070\141\004\031
\172\101\100\332\132\021\144\165\002\375\144\321\326\224\102\017
\042\347\145\315\257\220\016\014\133\061\001\231\121\357\105\214
\175\245\070\332\236\174\113\344\246\350\263\244\202\326\003\064
\056\117\267\121\253\167\070\011\365\006\376\334\146\033\017\077
\372\175\357\214\125\276\340\015\206\225\241\334\275\304\303\010
\321\105\036\362\275\276\160\361\346\046\306\273\010\261\050\245
\302\245\355\210\326\241\300\373\043\361\047\071\314\341\204\007
\031\274\176\366\314\070\377\156\020\273\106\351\043\211\044\201
\377\000\342\121\000\334\122\120\175\023\120\175\026\075\100\215
\323\277\371\212\145\330\142\022\051\167\302\272\302\111\064\117
\212\171\151\311\113\025\363\064\336\317\257\206\342\345\310\251
\126\141\114\006\124\132\305\154\031\352\363\310\104\315\044\032
\166\321\161\000\131\153\331\165\233\316\375\020\376\261\203\242
\245\267\222\206\166\233\112\367\035\334\214\205\246\130\255\212
\246\150\151\027\311\155\033\246\317\047\113\051\054\335\161\102
\032\211\020\345\325\233\022\137\111\213\204\274\330\010\134\373
\317\070\102\257\276\321\156\173\221\252\146\100\305\005\176\053
\320\146\266\307\337\122\376\364\105\155\043\222\041\236\022\001
\220\163\203\342\245\011\015\327\300\370\205\225\036\143\321\077
\065\332\224\321\067\331\365\002\003\001\000\001\243\143\060\141
\060\035\006\003\125\035\016\004\026\004\024\325\071\034\234\133
\157\004\252\242\225\114\357\040\335\051\164\244\305\105\161\060

\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\037\006\003\125\035\043\004\030\060\026\200\024\325\071\034
\234\133\157\004\252\242\225\114\357\040\335\051\164\244\305\105
\161\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\003\202\002\001\000\077\347\137\363\042\026\336\203\236\040\344
\202\347\345\236\167\311\373\053\260\164\015\337\033\164\042\017
\163\020\241\260\027\354\114\014\324\050\160\152\146\162\104\151
\020\223\166\065\317\057\370\217\074\253\031\174\161\222\225\161
\033\067\025\302\033\050\172\357\156\170\070\337\373\217\233\001
\040\334\257\366\326\215\011\146\332\304\106\251\374\225\252\104
\043\022\337\107\300\260\025\354\265\261\236\154\017\221\252\246
\072\345\301\015\140\154\120\100\160\134\134\310\316\263\314\353
\355\252\210\031\126\245\244\310\014\172\345\166\100\147\063\264
\075\226\334\167\313\043\170\371\123\133\317\215\336\261\247\216
\132\172\242\062\143\243\210\327\045\141\132\135\111\072\162\346
\317\252\224\206\154\156\367\202\340\216\147\223\050\305\250\015
\115\357\070\255\171\112\146\215\204\001\010\004\171\363\122\306
\101\347\232\142\006\263\365\022\036\354\331\000\103\323\353\226
\167\164\341\171\371\024\224\204\155\272\124\202\005\214\337\001
\362\060\210\201\254\172\057\213\103\054\166\064\316\065\347\207
\216\116\013\012\245\032\127\261\123\132\277\153\330\276\000\176
\306\371\356\146\061\010\261\337\224\063\204\234\167\117\173\144
\057\357\216\017\131\050\042\313\360\134\076\053\375\065\326\225
\377\003\354\145\122\176\276\362\031\370\173\325\122\054\122\167
\232\221\146\101\160\215\325\111\347\013\110\177\212\256\336\105
\075\335\376\346\322\344\222\303\173\316\060\240\111\156\067\255
\250\323\054\266\075\236\041\333\006\127\342\360\256\006\373\331
\305\021\067\241\173\333\035\021\174\150\166\040\076\365\274\245
\331\146\265\041\255\105\046\306\135\036\002\243\101\304\324\175
\201\031\313\027\227\006\017\346\354\164\000\106\304\165\335\075
\360\103\064\257\246\274\374\366\202\373\317\305\372\263\017\045
\245\077\146\020\326\236\202\245\333\072\023\171\336\215\251\327
\246\215\206\322\057\331\151\015\342\165\170\176\111\137\042\253
\206\160\050\121\263\172\266\240\171\372\324\345\203\247\260\167
\312\333\001\202\357\342\276\115\057\323\300\115\320\343\151\156
\174\046\233\353\246\373\105\357\261\004\212\057\252\041\006\366
\346\324\274\101\043

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "MULTICERT Root Certification Authority 01"

Issuer: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação


```

Electrónica S.A.,C=PT
# Serial Number:54:4d:a5:bc:40:35:56:5a
# Subject: CN=MULTICERT Root Certification Authority 01,O=MULTICERT - Serviços de Certificação
Electrónica S.A.,C=PT
# Not Valid Before: Fri Apr 04 08:59:47 2014
# Not Valid After: Mon Apr 04 08:59:47 2039
# Fingerprint (MD5): 30:b4:c2:a5:23:02:1d:2e:1b:c0:59:f2:ca:23:99:20
# Fingerprint (SHA1): 46:af:7a:31:b5:99:46:0d:46:9d:60:41:14:5b:13:65:1d:f9:17:0a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "MULTICERT Root Certification Authority 01"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\106\257\172\061\265\231\106\015\106\235\140\101\024\133\023\145
\035\371\027\012
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\060\264\302\245\043\002\035\056\033\300\131\362\312\043\231\040
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\120\124
\061\102\060\100\006\003\125\004\012\014\071\115\125\114\124\111
\103\105\122\124\040\055\040\123\145\162\166\151\303\247\157\163
\040\144\145\040\103\145\162\164\151\146\151\143\141\303\247\303
\243\157\040\105\154\145\143\164\162\303\263\156\151\143\141\040
\123\056\101\056\061\062\060\060\006\003\125\004\003\014\051\115
\125\114\124\111\103\105\122\124\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\060\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\124\115\245\274\100\065\126\132
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft
Code Signing Only Certificate
# Certificate "Certification Authority of WoSign G2"
# Issuer: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN
# Serial Number:6b:25:da:8a:88:9d:7c:bc:0f:05:b3:b1:7a:61:45:44
# Subject: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Nov 08 00:58:58 2014
# Not Valid After: Tue Nov 08 00:58:58 2044

```

```
# Fingerprint (MD5): c8:1c:7d:19:aa:cb:71:93:f2:50:f8:52:a8:1e:ba:60
# Fingerprint (SHA1): fb:ed:dc:90:65:b7:27:20:37:bc:55:0c:9c:56:de:bb:f2:78:94:e1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156\040\107\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\153\045\332\212\210\235\174\274\017\005\263\261\172\141
\105\104
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\174\060\202\002\144\240\003\002\001\002\002\020\153
\045\332\212\210\235\174\274\017\005\263\261\172\141\105\104\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\130
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103
\101\040\114\151\155\151\164\145\144\061\055\060\053\006\003\125
\004\003\023\044\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\157\146\040\127
\157\123\151\147\156\040\107\062\060\036\027\015\061\064\061\061
\060\070\060\060\065\070\065\070\132\027\015\064\064\061\061\060
\070\060\060\065\070\065\070\132\060\130\061\013\060\011\006\003
\125\004\006\023\002\103\116\061\032\060\030\006\003\125\004\012
\023\021\127\157\123\151\147\156\040\103\101\040\114\151\155\151
\164\145\144\061\055\060\053\006\003\125\004\003\023\044\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\157\146\040\127\157\123\151\147\156\040
\107\062\060\202\001\042\060\015\006\011\052\206\110\206\367\015
```

\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\276\305\304\240\042\200\111\117\277\331\207\021\306
\123\341\273\017\275\140\177\257\366\202\016\037\334\260\216\075
\227\340\120\074\217\072\357\146\073\105\007\233\040\370\343\327
\045\206\065\220\026\242\135\157\060\031\010\207\013\177\006\262
\235\142\217\336\257\222\245\140\324\053\200\232\122\077\365\232
\203\351\064\132\313\331\325\142\134\346\016\340\337\006\230\016
\200\174\312\264\035\023\210\153\016\250\044\167\003\320\356\133
\363\312\151\221\065\071\126\305\155\343\367\075\117\136\223\070
\044\312\030\351\044\313\222\003\335\314\034\075\011\160\344\040
\344\361\256\254\273\163\151\243\143\072\017\105\017\241\112\232
\302\321\143\254\313\020\370\075\346\116\050\267\353\304\225\261
\254\375\136\253\372\101\313\135\235\113\334\364\174\166\357\147
\177\000\172\215\322\240\032\134\115\042\341\265\332\335\166\263
\324\166\337\136\270\213\230\310\024\124\314\153\027\222\267\340
\112\277\111\224\141\013\070\220\217\135\044\154\045\173\073\171
\331\342\176\235\255\237\230\241\006\374\170\024\140\127\370\356
\200\167\261\002\003\001\000\001\243\102\060\100\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006
\003\125\035\016\004\026\004\024\372\140\251\353\145\305\335\026
\024\010\116\014\017\215\233\340\367\144\257\147\060\015\006\011
\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000
\127\303\172\066\202\234\215\230\342\253\100\252\107\217\307\247
\133\355\174\347\075\146\132\073\061\273\337\363\026\063\221\374
\174\173\245\302\246\146\343\252\260\267\047\230\077\111\327\140
\147\147\077\066\117\112\313\361\024\372\132\207\050\034\355\217
\101\062\306\225\371\175\332\275\173\133\302\260\041\343\217\106
\334\041\070\103\164\114\373\060\370\027\162\301\062\374\310\221
\027\304\314\130\067\116\013\314\132\367\041\065\050\203\154\140
\055\104\353\122\214\120\075\265\154\022\327\372\011\273\154\262
\112\261\305\211\344\374\323\122\330\141\027\376\172\224\204\217
\171\266\063\131\272\017\304\013\342\160\240\113\170\056\372\310
\237\375\257\221\145\012\170\070\025\345\227\027\024\335\371\340
\054\064\370\070\320\204\042\000\300\024\121\030\053\002\334\060
\132\360\350\001\174\065\072\043\257\010\344\257\252\216\050\102
\111\056\360\365\231\064\276\355\017\113\030\341\322\044\074\273
\135\107\267\041\362\215\321\012\231\216\343\156\076\255\160\340
\217\271\312\314\156\201\061\366\173\234\172\171\344\147\161\030
END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Certification Authority of WoSign G2"

Issuer: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN

```

# Serial Number:6b:25:da:8a:88:9d:7c:bc:0f:05:b3:b1:7a:61:45:44
# Subject: CN=Certification Authority of WoSign G2,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Nov 08 00:58:58 2014
# Not Valid After: Tue Nov 08 00:58:58 2044
# Fingerprint (MD5): c8:1c:7d:19:aa:cb:71:93:f2:50:f8:52:a8:1e:ba:60
# Fingerprint (SHA1): fb:ed:dc:90:65:b7:27:20:37:bc:55:0c:9c:56:de:bb:f2:78:94:e1
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\373\355\334\220\145\267\047\040\067\274\125\014\234\126\336\273
\362\170\224\341
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\310\034\175\031\252\313\161\223\362\120\370\122\250\036\272\140
END
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\055\060\053\006
\003\125\004\003\023\044\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\153\045\332\212\210\235\174\274\017\005\263\261\172\141
\105\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "CA WoSign ECC Root"
# Issuer: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
# Serial Number:68:4a:58:70:80:6b:f0:8f:02:fa:f6:de:e8:b0:90:90
# Subject: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Nov 08 00:58:58 2014
# Not Valid After: Tue Nov 08 00:58:58 2044
# Fingerprint (MD5): 80:c6:53:ee:61:82:28:72:f0:ff:21:b9:17:ca:b2:20
# Fingerprint (SHA1): d2:7a:d2:be:ed:94:c0:a1:3c:c7:25:21:ea:5d:71:be:81:19:f3:2b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CA WoSign ECC Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
\105\103\103\040\122\157\157\164
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
\105\103\103\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\150\112\130\160\200\153\360\217\002\372\366\336\350\260
\220\220
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\011\060\202\001\217\240\003\002\001\002\002\020\150
\112\130\160\200\153\360\217\002\372\366\336\350\260\220\220\060
\012\006\010\052\206\110\316\075\004\003\003\060\106\061\013\060
\011\006\003\125\004\006\023\002\103\116\061\032\060\030\006\003
\125\004\012\023\021\127\157\123\151\147\156\040\103\101\040\114
\151\155\151\164\145\144\061\033\060\031\006\003\125\004\003\023
\022\103\101\040\127\157\123\151\147\156\040\105\103\103\040\122
\157\157\164\060\036\027\015\061\064\061\061\060\070\060\060\065
\070\065\070\132\027\015\064\064\061\061\060\070\060\060\065\070
\065\070\132\060\106\061\013\060\011\006\003\125\004\006\023\002
\103\116\061\032\060\030\006\003\125\004\012\023\021\127\157\123
\151\147\156\040\103\101\040\114\151\155\151\164\145\144\061\033
\060\031\006\003\125\004\003\023\022\103\101\040\127\157\123\151
\147\156\040\105\103\103\040\122\157\157\164\060\166\060\020\006
\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003
\142\000\004\341\375\216\270\103\044\253\226\173\205\302\272\013
\255\215\340\072\343\044\271\322\261\276\210\072\312\277\112\270
\371\357\054\057\257\121\120\074\107\165\154\370\224\267\233\374
\050\036\305\124\314\143\235\026\113\123\301\347\040\253\315\254
\045\322\177\217\302\301\132\202\136\060\213\172\124\316\003\265
\221\177\252\224\320\321\212\110\314\202\005\046\241\325\121\022
\326\173\066\243\102\060\100\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001
```

```
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\252\375\325\132\243\366\207\213\062\205\375\321\062
\133\200\105\223\363\003\270\060\012\006\010\052\206\110\316\075
\004\003\003\003\150\000\060\145\002\061\000\344\244\204\260\201
\325\075\260\164\254\224\244\350\016\075\000\164\114\241\227\153
\371\015\121\074\241\331\073\364\015\253\251\237\276\116\162\312
\205\324\331\354\265\062\105\030\157\253\255\002\060\175\307\367
\151\143\057\241\341\230\357\023\020\321\171\077\321\376\352\073
\177\336\126\364\220\261\025\021\330\262\042\025\320\057\303\046
\056\153\361\221\262\220\145\364\232\346\220\356\112
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft

Code Signing Only Certificate

Trust for "CA WoSign ECC Root"

Issuer: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN

Serial Number:68:4a:58:70:80:6b:f0:8f:02:fa:f6:de:e8:b0:90:90

Subject: CN=CA WoSign ECC Root,O=WoSign CA Limited,C=CN

Not Valid Before: Sat Nov 08 00:58:58 2014

Not Valid After: Tue Nov 08 00:58:58 2044

Fingerprint (MD5): 80:c6:53:ee:61:82:28:72:f0:ff:21:b9:17:ca:b2:20

Fingerprint (SHA1): d2:7a:d2:be:ed:94:c0:a1:3c:c7:25:21:ea:5d:71:be:81:19:f3:2b

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CA WoSign ECC Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\322\172\322\276\355\224\300\241\074\307\045\041\352\135\161\276
\201\031\363\053
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\200\306\123\356\141\202\050\162\360\377\041\271\027\312\262\040
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\023\022\103\101\040\127\157\123\151\147\156\040
\105\103\103\040\122\157\157\164
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\150\112\130\160\200\153\360\217\002\372\366\336\350\260
```

```
\220\220
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "CCA India 2015 SPL"
# Issuer: CN=CCA India 2015 SPL,O=India PKI,C=IN
# Serial Number: 10165 (0x27b5)
# Subject: CN=CCA India 2015 SPL,O=India PKI,C=IN
# Not Valid Before: Thu Jan 29 11:36:43 2015
# Not Valid After: Wed Jan 29 11:36:43 2025
# Fingerprint (MD5): 16:da:3e:ac:1d:0a:57:a9:b4:e2:de:d0:93:96:dc:d4
# Fingerprint (SHA1): 3b:c6:dc:e0:03:07:bd:67:60:41:eb:d8:59:70:c6:2f:8f:da:51:09
```

```
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2015 SPL"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\265
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\053\060\202\002\023\240\003\002\001\002\002\002\047
\265\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
\060\036\027\015\061\065\060\061\062\071\061\061\063\066\064\063
\132\027\015\062\065\060\061\062\071\061\061\063\066\064\063\132
```

\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\227\327\066\211\075\067\101\016\221\077\153\040\137\374\072
\176\073\132\135\057\303\014\207\123\074\030\242\310\141\163\015
\010\016\126\036\322\156\140\245\127\145\334\376\317\120\206\017
\132\116\253\142\213\004\312\126\357\341\321\236\256\164\255\252
\372\077\101\130\321\125\160\160\076\105\311\033\200\163\374\010
\210\344\213\162\250\012\265\051\127\260\255\012\221\101\032\234
\137\120\175\254\027\032\045\133\041\360\225\053\347\337\067\254
\064\363\007\260\361\035\301\023\357\173\056\072\305\251\141\220
\262\170\137\124\120\074\263\132\125\143\266\313\020\243\157\373
\015\364\266\357\346\010\336\242\020\277\166\227\177\352\331\226
\321\324\303\163\002\161\264\251\260\254\254\037\027\040\245\107
\106\326\104\002\070\231\276\313\024\170\376\346\137\304\177\335
\157\351\252\107\024\220\021\330\035\200\300\025\324\214\240\231
\343\031\016\012\017\314\032\010\234\324\123\007\000\340\037\111
\277\202\202\114\317\233\330\156\323\324\021\000\022\154\017\175
\140\147\112\214\120\333\362\057\340\271\171\207\203\303\134\302
\071\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125
\035\016\004\012\004\010\114\021\160\252\217\335\037\007\060\013
\006\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000\055
\274\214\025\312\064\355\114\050\042\273\341\123\045\113\072\227
\251\355\046\242\244\253\115\373\012\022\156\347\065\346\147\016
\030\201\142\066\245\314\302\337\032\345\150\001\201\116\263\231
\324\107\025\022\235\166\351\241\246\023\035\260\377\175\273\127
\343\357\131\233\310\073\120\151\306\143\072\254\240\301\345\220
\350\144\051\134\110\101\151\067\254\073\273\335\343\125\306\327
\222\015\225\203\260\050\127\302\243\251\226\247\312\336\114\036
\232\377\076\245\056\047\136\333\146\147\047\205\357\253\212\134
\163\174\210\315\107\146\360\235\203\314\204\217\342\051\364\037
\101\157\267\365\041\015\365\224\126\121\343\374\377\023\130\267
\237\003\356\051\237\322\001\260\142\236\224\275\031\206\132\103
\372\152\211\201\260\352\134\030\207\312\200\225\373\355\001\277
\021\032\337\225\024\256\056\342\257\315\221\220\272\263\047\303
\157\020\330\331\016\264\245\164\154\201\267\137\031\314\376\047
\116\263\105\230\130\030\234\127\304\222\162\022\317\247\202\071
\325\341\020\227\012\206\060\105\205\143\250\153\115\232\374

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE


```
# Microsoft Code Signing Only Certificate
# Trust for "CCA India 2015 SPL"
# Issuer: CN=CCA India 2015 SPL,O=India PKI,C=IN
# Serial Number: 10165 (0x27b5)
# Subject: CN=CCA India 2015 SPL,O=India PKI,C=IN
# Not Valid Before: Thu Jan 29 11:36:43 2015
# Not Valid After: Wed Jan 29 11:36:43 2025
# Fingerprint (MD5): 16:da:3e:ac:1d:0a:57:a9:b4:e2:de:d0:93:96:dc:d4
# Fingerprint (SHA1): 3b:c6:dc:e0:03:07:bd:67:60:41:eb:d8:59:70:c6:2f:8f:da:51:09
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2015 SPL"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\073\306\334\340\003\007\275\147\140\101\353\330\131\160\306\057
\217\332\121\011
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\026\332\076\254\035\012\127\251\264\342\336\320\223\226\334\324
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\033\060\031\006\003\125\004\003\023\022\103\103
\101\040\111\156\144\151\141\040\062\060\061\065\040\123\120\114
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\265
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Swedish Government Root Authority v3"
# Issuer: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE
# Serial Number:32:69:a2:bf:40:6b:8d:b4:47:83:64:3c:8b:0d:c9:43
# Subject:
CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE
# Not Valid Before: Tue Sep 29 11:32:32 2015
# Not Valid After: Sat Sep 29 11:42:09 2040
# Fingerprint (MD5): 63:e2:fd:ea:a2:55:6a:70:54:fb:3a:22:e3:34:b1:17
# Fingerprint (SHA1): 74:6f:88:f9:ac:16:3c:53:00:9e:ef:92:0c:40:67:75:6a:15:71:7e
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swedish Government Root Authority v3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
\157\162\151\164\171\040\166\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
\157\162\151\164\171\040\166\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\062\151\242\277\100\153\215\264\107\203\144\074\213\015
\311\103
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\252\060\202\003\222\240\003\002\001\002\002\020\062
\151\242\277\100\153\215\264\107\203\144\074\213\015\311\103\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\146
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\050\060
\046\006\003\125\004\012\023\037\123\167\145\144\151\163\150\040
\123\157\143\151\141\154\040\111\156\163\165\162\141\156\143\145
\040\101\147\145\156\143\171\061\055\060\053\006\003\125\004\003
\023\044\123\167\145\144\151\163\150\040\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\101\165\164\150\157\162
\151\164\171\040\166\063\060\036\027\015\061\065\060\071\062\071
\061\061\063\062\063\062\132\027\015\064\060\060\071\062\071\061
\061\064\062\060\071\132\060\146\061\013\060\011\006\003\125\004
\006\023\002\123\105\061\050\060\046\006\003\125\004\012\023\037
\123\167\145\144\151\163\150\040\123\157\143\151\141\154\040\111
\156\163\165\162\141\156\143\145\040\101\147\145\156\143\171\061
\055\060\053\006\003\125\004\003\023\044\123\167\145\144\151\163
\150\040\107\157\166\145\162\156\155\145\156\164\040\122\157\157
\164\040\101\165\164\150\157\162\151\164\171\040\166\063\060\202
```

\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Swedish Government Root Authority v3"

Issuer: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

Serial Number:32:69:a2:bf:40:6b:8d:b4:47:83:64:3c:8b:0d:c9:43

Subject: CN=Swedish Government Root Authority v3,O=Swedish Social Insurance Agency,C=SE

#

Not Valid Before: Tue Sep 29 11:32:32 2015

Not Valid After: Sat Sep 29 11:42:09 2040

Fingerprint (MD5): 63:e2:fd:ea:a2:55:6a:70:54:fb:3a:22:e3:34:b1:17

Fingerprint (SHA1): 74:6f:88:f9:ac:16:3c:53:00:9e:ef:92:0c:40:67:75:6a:15:71:7e

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swedish Government Root Authority v3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\164\157\210\371\254\026\074\123\000\236\357\222\014\100\147\165

\152\025\161\176

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\143\342\375\352\242\125\152\160\124\373\072\042\343\064\261\027

END

CKA_ISSUER MULTILINE_OCTAL

\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061

\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163

\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156

\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125

\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145

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END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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\311\103

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Swedish Government Root Authority v2"

Issuer: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

Serial Number:54:12:15:9f:ab:8a:75:93:44:94:ca:77:40:56:2e:ef

Subject: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

Not Valid Before: Tue May 05 11:15:23 2015

Not Valid After: Sat May 05 11:24:19 2040

Fingerprint (MD5): 33:85:e1:95:66:4b:83:50:73:42:c2:e0:da:a0:40:92

Fingerprint (SHA1): 32:f4:42:09:3b:36:d7:03:1b:75:ca:4d:ad:dc:b3:27:fa:a0:2b:9c

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swedish Government Root Authority v2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163

\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156

\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125

\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145

\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150

\157\162\151\164\171\040\166\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
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END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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\056\357

END

CKA_VALUE MULTILINE_OCTAL

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\061\013\060\011\006\003\125\004\006\023\002\123\105\061\050\060
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\040\101\147\145\156\143\171\061\055\060\053\006\003\125\004\003
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\061\062\064\061\071\132\060\146\061\013\060\011\006\003\125\004
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\246\215\363\371\225\375\052\211\165\172\171\067\375\046\171\057
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Swedish Government Root Authority v2"

Issuer: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

Serial Number:54:12:15:9f:ab:8a:75:93:44:94:ca:77:40:56:2e:ef

#

Subject: CN=Swedish Government Root Authority v2,O=Swedish Social Insurance Agency,C=SE

Not Valid Before: Tue May 05 11:15:23 2015

Not Valid After: Sat May 05 11:24:19 2040

Fingerprint (MD5): 33:85:e1:95:66:4b:83:50:73:42:c2:e0:da:a0:40:92

Fingerprint (SHA1): 32:f4:42:09:3b:36:d7:03:1b:75:ca:4d:ad:dc:b3:27:fa:a0:2b:9c

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swedish Government Root Authority v2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\062\364\102\011\073\066\327\003\033\165\312\115\255\334\263\047
\372\240\053\234
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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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\063\205\341\225\146\113\203\120\163\102\302\340\332\240\100\222
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\146\061\013\060\011\006\003\125\004\006\023\002\123\105\061
```



```
\050\060\046\006\003\125\004\012\023\037\123\167\145\144\151\163
\150\040\123\157\143\151\141\154\040\111\156\163\165\162\141\156
\143\145\040\101\147\145\156\143\171\061\055\060\053\006\003\125
\004\003\023\044\123\167\145\144\151\163\150\040\107\157\166\145
\162\156\155\145\156\164\040\122\157\157\164\040\101\165\164\150
\157\162\151\164\171\040\166\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\124\022\025\237\253\212\165\223\104\224\312\167\100\126
\056\357
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Tunisian Root Certificate Authority - TunRootCA2"

Issuer: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN

Serial Number:21:66:15:05:05:27:05:05:bc:8a:b0:1d:af:0a:be:c4

Subject: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN

Not Valid Before: Tue May 05 08:57:01 2015

Not Valid After: Wed May 05

08:57:01 2027

Fingerprint (MD5): 03:d1:25:b1:f0:55:ad:ca:dd:7c:59:93:50:ef:17:21

Fingerprint (SHA1): 96:38:63:3c:90:56:ae:88:14:a0:65:d2:3b:dc:60:a0:ee:70:2f:a7

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Tunisian Root Certificate Authority - TunRootCA2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\147\145\156\143\171
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143
```

\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\147\145\156\143\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\041\146\025\005\005\047\005\005\274\212\260\035\257\012
\276\304

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\274\060\202\003\244\240\003\002\001\002\002\020\041
\146\025\005\005\047\005\005\274\212\260\035\257\012\276\304\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\170
\061\013\060\011\006\003\125\004\006\023\002\124\116\061\071\060
\067\006\003\125\004\003\023\060\124\165\156\151\163\151\141\156
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\145\040\101\165\164\150\157\162\151\164\171\040\055\040\124\165
\156\122\157\157\164\103\101\062\061\056\060\054\006\003\125\004
\012\023\045\116\141\164\151\157\156\141\154\040\104\151\147\151
\164\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\147\145\156\143\171\060\036\027\015\061\065\060\065
\060\065\060\070\065\067\060\061\132\027\015\062\067\060\065\060
\065\060\070\065\067\060\061\132\060\170\061\013\060\011\006\003
\125\004\006\023\002\124\116\061\071\060\067\006\003\125\004\003
\023\060\124\165\156\151\163\151\141\156\040\122\157\157\164\040
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150
\157\162\151\164\171\040\055\040\124\165\156\122\157\157\164\103
\101\062\061\056\060\054\006\003\125\004\012\023\045\116\141\164
\151\157\156\141\154\040\104\151\147\151\164\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\147\145\156
\143\171\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\260\007\347\142\373\320\015\125\316\147\267\127\215
\156\014\251\047\124\036\353\251\044\253\147\217\217\234\141\017
\333\050\062\057\073\370\054\145\222\055\256\272\063\222\300\053
\236\362\037\136\155\043\135\263\130\037\215\241\300\155\165\205
\012\260\023\116\133\126\106\213\071\275\013\202\273\072\103\233
\010\272\106\356\371\027\353\315\310\327\343\165\023\336\256\121
\110\012\316\040\225\106\237\002\354\125\214\164\252\132\374\374
\352\011\063\065\156\243\107\006\307\335\176\204\150\016\307\022
\312\224\303\355\346\154\002\155\336\002\211\065\263\004\313\105
\370\174\107\244\323\037\337\345\134\043\342\363\042\173\271\113
\242\375\027\065\135\110\351\277\365\263\045\143\213\347\170\353
\374\165\047\275\210\134\246\205\077\101\337\225\174\335\172\106
\217\376\036\332\261\253\330\323\216\315\006\214\311\330\122\102
\021\122\242\203\217\134\203\173\344\047\266\217\037\240\136\075

\322\165\175\171\123\223\006\227\343\003\307\226\054\332\001\074
\171\305\073\120\350\260\323\241\244\342\323\203\175\104\370\020
\317\240\032\052\362\145\200\275\167\301\230\145\166\256\022\041
\142\312\072\276\276\265\231\303\133\304\321\277\233\300\012\312
\130\036\025\246\327\041\136\261\115\012\345\160\170\232\150\346
\164\146\062\024\052\036\021\276\210\367\006\366\125\243\303\037
\156\027\220\125\321\212\100\211\126\103\325\117\346\242\311\210
\144\000\005\121\077\127\264\074\266\276\152\221\161\100\361\242
\134\361\327\355\234\266\127\366\131\324\052\021\345\324\345\277
\273\036\321\310\327\137\104\005\233\273\211\072\255\247\103\167
\176\025\140\174\210\135\233\354\245\134\322\106\255\014\213\124
\105\324\224\121\125\105\122\252\134\330\021\254\370\126\042\154
\331\322\024\351\267\116\102\205\124\106\370\001\306\075\046\006
\167\350\262\065\033\360\235\102\311\177\376\200\047\001\120\313
\177\305\254\124\372\153\155\226\214\101\244\241\322\347\265\221
\110\157\167\034\213\302\053\164\376\074\134\304\135\224\316\253
\361\040\226\153\301\014\132\137\371\345\065\271\154\243\020\147
\357\221\252\110\016\357\110\267\166\130\142\331\276\236\102\263
\244\275\065\002\003\001\000\001\243\102\060\100\060\035\006\003
\125\035\016\004\026\004\024\314\163\305\243\152\051\061\227\247
\215\240\330\124\301\012\165\266\043\077\246\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011
\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000
\056\362\207\110\355\231\236\237\001\014\074\311\012\170\123\174
\030\065\336\266\345\154\364\000\200\341\233\213\331\372\373\252
\373\145\267\322\311\365\327\247\313\176\311\261\242\161\130\155
\131\067\326\340\063\020\312\265\331\162\333\116\045\067\252\246
\335\035\030\275\365\311\212\234\172\210\356\037\002\304\055\222
\124\175\127\342\134\031\030\043\002\172\134\111\225\266\230\347
\302\140\101\145\100\273\354\132\267\161\234\120\362\163\166\373
\137\015\357\065\317\264\151\215\205\350\114\220\027\003\013\311
\263\056\040\067\143\021\142\246\117\343\064\340\373\171\125\347
\306\302\256\102\376\260\064\154\111\043\016\162\007\173\146\005
\125\110\373\022\017\240\300\372\116\321\373\075\314\376\375\026
\113\126\120\315\021\054\247\233\367\261\012\317\246\353\357\335
\216\270\256\102\010\174\244\214\224\352\206\307\103\343\367\074
\212\337\107\322\060\100\310\055\123\365\157\021\111\314\041\214
\226\103\117\020\240\107\241\126\215\037\034\133\330\126\133\353
\064\166\341\065\072\161\324\314\041\057\236\065\050\362\132\336
\236\344\356\107\152\020\350\070\275\112\264\175\004\177\005\256
\110\012\264\003\277\056\263\012\033\237\313\255\335\115\320\207
\041\267\107\166\202\203\055\307\127\276\232\025\243\033\060\030
\154\243\072\161\157\144\107\050\222\333\021\141\040\232\167\145
\055\371\254\126\023\154\113\243\137\377\233\244\350\357\347\130
\350\173\236\073\177\152\247\276\071\012\023\224\311\110\116\146
\144\330\123\114\354\101\153\375\374\066\056\327\016\337\141\013
\173\265\100\254\335\102\111\155\236\200\277\140\225\360\351\300

```
\077\173\273\030\351\070\265\126\116\247\176\212\142\357\230\036
\370\170\100\251\273\330\351\345\264\264\371\343\147\234\354\123
\317\270\102\264\057\223\201\065\240\154\366\272\040\212\150\075
\367\155\377\177\323\114\367\172\224\150\003\167\103\073\065\121
\252\123\022\076\107\023\024\071\254\326\145\217\250\106\377\074
\041\364\322\277\320\110\244\176\247\121\233\227\022\365\231\064
\027\043\126\204\023\143\313\064\312\037\312\272\250\007\051\363
\103\044\012\111\177\375\016\324\220\360\253\103\041\142\234\217
END
```

```
CKA_NSS_MOZILLA_CA_POLICY
```

```
CK_BBOOL CK_FALSE
```

```
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
```

```
# Trust for "Tunisian Root Certificate Authority - TunRootCA2"
```

```
# Issuer: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
```

```
# Serial Number:21:66:15:05:05:27:05:05:bc:8a:b0:1d:af:0a:be:c4
```

```
#
```

```
Subject: O=National Digital Certification Agency,CN=Tunisian Root Certificate Authority - TunRootCA2,C=TN
```

```
# Not Valid Before: Tue May 05 08:57:01 2015
```

```
# Not Valid After: Wed May 05 08:57:01 2027
```

```
# Fingerprint (MD5): 03:d1:25:b1:f0:55:ad:ca:dd:7c:59:93:50:ef:17:21
```

```
# Fingerprint (SHA1): 96:38:63:3c:90:56:ae:88:14:a0:65:d2:3b:dc:60:a0:ee:70:2f:a7
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Tunisian Root Certificate Authority - TunRootCA2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\226\070\143\074\220\126\256\210\024\240\145\322\073\334\140\240
\356\160\057\247
```

```
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\003\321\045\261\360\125\255\312\335\174\131\223\120\357\027\041
```

```
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\170\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\071\060\067\006\003\125\004\003\023\060\124\165\156\151\163\151
\141\156\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040
\124\165\156\122\157\157\164\103\101\062\061\056\060\054\006\003
\125\004\012\023\045\116\141\164\151\157\156\141\154\040\104\151
\147\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\147\145\156\143\171
```

```
END
```

```
CKA_SERIAL_NUMBER
```

```

MULTILINE_OCTAL
\002\020\041\146\025\005\005\047\005\005\274\212\260\035\257\012
\276\304
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "OpenTrust Root CA G2"
# Issuer: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR
# Serial Number:11:20:a1:69:1b:bf:bd:b9:bd:52:96:8f:23:e8:48:bf:26:11
# Subject: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint
(MD5): 57:24:b6:59:24:6b:ae:c8:fe:1c:0c:20:f2:c0:4e:eb
# Fingerprint (SHA1): 79:5f:88:60:c5:ab:7c:3d:92:e6:cb:f4:8d:e1:45:cd:11:ef:60:0b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\241\151\033\277\275\271\275\122\226\217\043\350
\110\277\046\021
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\157\060\202\003\127\240\003\002\001\002\002\022\021
\040\241\151\033\277\275\271\275\122\226\217\043\350\110\277\046

```

\021\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062\060\036\027\015\061\064\060\065\062\066\060\060\060\060
\060\060\132\027\015\063\070\060\061\061\065\060\060\060\060\060
\060\132\060\100\061\013\060\011\006\003\125\004\006\023\002\106
\122\061\022\060\020\006\003\125\004\012\014\011\117\160\145\156
\124\162\165\163\164\061\035\060\033\006\003\125\004\003\014\024
\117\160\145\156\124\162\165\163\164\040\122\157\157\164\040\103
\101\040\107\062\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\314\266\127\245\063\224\020\201\062\123\337
\141\176\017\166\071\317\134\302\123\165\035\111\172\226\070\335
\242\163\152\361\157\336\136\242\132\271\161\041\276\066\331\241
\374\274\356\154\250\174\064\032\161\032\350\032\330\137\016\104
\006\355\247\340\363\322\141\013\340\062\242\226\321\070\360\302
\332\001\027\374\344\254\117\350\356\211\036\164\253\117\277\036
\011\266\066\152\126\363\341\356\226\211\146\044\006\344\315\102
\072\112\335\340\232\260\304\202\105\263\376\311\253\134\174\076
\311\353\027\057\014\175\156\256\245\217\310\254\045\012\157\372
\325\105\230\322\065\011\366\003\103\224\376\331\277\040\225\171
\200\230\212\331\211\065\273\121\033\244\067\175\374\231\073\253
\377\277\254\015\217\103\261\231\173\026\020\176\035\157\107\304
\025\217\004\226\010\006\102\004\370\204\326\035\274\221\246\102
\276\111\325\152\210\077\274\055\121\321\236\215\340\122\314\127
\335\065\065\130\333\264\217\044\210\344\213\337\334\153\124\322
\201\053\262\316\222\113\034\037\106\372\035\330\222\313\166\147
\265\011\231\011\345\254\027\024\125\160\306\074\240\126\012\003
\263\334\142\031\337\310\265\060\177\365\074\046\165\021\275\327
\033\263\207\236\007\257\145\161\345\240\317\032\247\011\020\035
\223\211\146\133\350\074\142\062\265\265\072\156\351\205\001\213
\236\103\214\147\163\050\131\133\353\343\334\054\314\245\046\162
\142\022\264\346\234\203\104\366\121\244\342\300\172\044\127\312
\016\245\077\072\265\073\213\345\166\356\160\346\222\336\026\134
\050\133\227\031\047\222\376\172\222\124\316\223\071\012\026\207
\274\143\263\365\261\223\134\340\156\267\320\352\371\142\062\210
\104\373\277\047\050\266\060\225\135\022\050\271\225\276\217\123
\030\345\242\030\026\342\126\244\262\054\020\365\035\067\246\370
\267\366\320\131\134\211\367\302\325\265\224\164\321\325\376\033
\266\360\346\326\036\173\322\074\313\250\343\365\030\363\041\037
\156\357\115\150\006\173\055\135\156\103\211\246\300\371\240\277
\202\036\317\123\177\264\353\054\333\135\366\152\175\100\044\005
\162\211\070\001\223\313\161\302\071\135\006\021\366\157\170\370
\067\015\071\204\047\002\003\001\000\001\243\143\060\141\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060

\035\006\003\125\035\016\004\026\004\024\152\071\372\102\042\367
\346\211\000\115\136\175\063\203\313\270\156\167\206\257\060\037
\006\003\125\035\043\004\030\060\026\200\024\152\071\372\102\042
\367\346\211\000\115\136\175\063\203\313\270\156\167\206\257\060
\015\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202
\002\001\000\230\313\253\100\074\345\063\002\227\177\055\207\246
\217\324\136\112\257\270\036\347\273\161\373\200\144\045\251\263
\032\076\150\135\047\046\247\272\052\341\360\127\203\012\144\117
\036\042\164\033\351\220\137\360\254\317\377\117\150\172\070\244
\020\154\015\261\307\244\167\200\030\266\242\050\104\166\247\064
\235\161\204\057\312\131\322\107\210\231\101\042\311\060\230\141
\156\075\250\250\005\155\321\037\300\121\104\126\177\047\065\002
\335\136\230\012\102\353\060\277\215\241\233\121\252\073\352\223
\106\144\305\000\171\336\041\153\366\127\240\206\327\006\162\354
\160\106\113\213\163\335\240\041\165\076\334\035\300\217\323\117
\163\034\205\331\376\177\142\310\225\157\266\323\173\214\272\123
\302\157\233\104\114\171\320\035\160\263\327\237\002\364\262\007
\260\307\345\370\255\043\016\246\126\311\051\022\167\110\331\057
\106\375\073\360\374\164\160\222\245\216\070\010\037\144\060\266
\267\113\373\066\254\020\216\240\122\063\143\235\003\065\126\305
\151\275\306\043\132\047\224\366\244\022\370\055\063\074\241\126
\245\137\326\031\351\355\174\010\275\167\315\047\144\314\224\332
\116\106\120\207\340\371\301\123\200\036\273\255\373\107\122\213
\033\375\242\371\336\016\042\267\075\063\131\154\324\336\365\225
\006\062\015\121\031\101\134\076\117\006\367\271\053\200\047\366
\243\252\172\174\006\341\103\303\023\071\142\032\066\275\340\050
\056\224\002\344\051\056\140\125\256\100\075\260\164\222\136\360
\040\144\226\077\137\105\135\210\265\212\332\002\240\133\105\124
\336\070\075\011\300\250\112\145\106\026\374\252\277\124\116\115
\133\276\070\103\267\050\312\213\063\252\032\045\272\045\134\051
\057\133\112\156\214\352\055\234\052\366\005\166\340\167\227\200
\210\335\147\023\157\035\150\044\213\117\267\164\201\345\364\140
\237\172\125\327\076\067\332\026\153\076\167\254\256\030\160\225
\010\171\051\003\212\376\301\073\263\077\032\017\244\073\136\037
\130\241\225\311\253\057\163\112\320\055\156\232\131\017\125\030
\170\055\074\121\246\227\213\346\273\262\160\252\114\021\336\377
\174\053\067\324\172\321\167\064\217\347\371\102\367\074\201\014
\113\122\012

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "OpenTrust

Root CA G2"

Issuer: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR

```
# Serial Number:11:20:a1:69:1b:bf:bd:b9:bd:52:96:8f:23:e8:48:bf:26:11
# Subject: CN=OpenTrust Root CA G2,O=OpenTrust,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): 57:24:b6:59:24:6b:ae:c8:fe:1c:0c:20:f2:c0:4e:eb
# Fingerprint (SHA1): 79:5f:88:60:c5:ab:7c:3d:92:e6:cb:f4:8d:e1:45:cd:11:ef:60:0b
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\171\137\210\140\305\253\174\075\222\346\313\364\215\341\105\315
\021\357\140\013
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\127\044\266\131\044\153\256\310\376\034\014\040\362\300\116\353
END
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\241\151\033\277\275\271\275\122\226\217\043\350
\110\277\046\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "OpenTrust Root CA G3"
# Issuer: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
# Serial Number:11:20:e6:f8:4c:fc:24:b0:be:05:40:ac:da:83:1b:34:60:3f
# Subject: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): 21:37:b4:17:16:92:7b:67:46:70:a9:96:d7:a8:13:24
# Fingerprint (SHA1): 6e:26:64:f3:56:bf:34:55:bf:d1:93:3f:7c:01:de:d8:13:da:8a:a6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```



```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OpenTrust Root CA G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\346\370\114\374\044\260\276\005\100\254\332\203
\033\064\140\077
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\041\060\202\001\246\240\003\002\001\002\002\022\021
\040\346\370\114\374\044\260\276\005\100\254\332\203\033\064\140
\077\060\012\006\010\052\206\110\316\075\004\003\003\060\100\061
\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060\020
\006\003\125\004\012\014\011\117\160\145\156\124\162\165\163\164
\061\035\060\033\006\003\125\004\003\014\024\117\160\145\156\124
\162\165\163\164\040\122\157\157\164\040\103\101\040\107\063\060
\036\027\015\061\064\060\065\062\066\060\060\060\060\060\060\132
\027\015\063\070\060\061\061\065\060\060\060\060\060\060\132\060
\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022
\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162\165
\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160\145
\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040\107
\063\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\112\356\130\256\115\312\146
\336\006\072\243\021\374\340\030\360\156\034\272\055\060\014\211
\331\326\356\233\163\203\251\043\025\214\057\131\212\132\335\024
\352\235\131\053\103\267\006\354\062\266\272\356\101\265\255\135
\241\205\314\352\035\024\146\243\147\176\106\342\224\363\347\266
\126\241\025\131\241\117\067\227\271\042\036\275\021\353\364\262
\037\136\303\024\232\345\331\227\231\243\143\060\141\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035
\006\003\125\035\016\004\026\004\024\107\167\303\024\213\142\071
\014\311\157\341\120\115\320\020\130\334\225\210\155\060\037\006
```

```
\003\125\035\043\004\030\060\026\200\024\107\167\303\024\213\142
\071\014\311\157\341\120\115\320\020\130\334\225\210\155\060\012
\006\010\052\206\110\316\075\004\003\003\003\151\000\060\146\002
\061\000\217\250\334\235\272\014\004\027\372\025\351\075\057\051
\001\227\277\201\026\063\100\223\154\374\371\355\200\160\157\252
\217\333\204\302\213\365\065\312\006\334\144\157\150\026\341\217
\221\271\002\061\000\330\113\245\313\302\320\010\154\351\030\373
\132\335\115\137\044\013\260\000\041\045\357\217\247\004\046\161
\342\174\151\345\135\232\370\101\037\073\071\223\223\235\125\352
\315\215\361\373\301
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "OpenTrust Root CA G3"

Issuer: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR

Serial Number: 11:20:e6:f8:4c:fc:24:b0:be:05:40:ac:da:83:1b:34:60:3f

Subject: CN=OpenTrust Root CA G3,O=OpenTrust,C=FR

Not Valid Before: Mon May 26 00:00:00 2014

Not Valid After: Fri Jan 15 00:00:00 2038

Fingerprint (MD5): 21:37:b4:17:16:92:7b:67:46:70:a9:96:d7:a8:13:24

Fingerprint (SHA1): 6e:26:64:f3:56:bf:34:55:bf:d1:93:3f:7c:01:de:d8:13:da:8a:a6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "OpenTrust Root CA G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\156\046\144\363\126\277\064\125\277\321\223\077\174\001\336\330
\023\332\212\246
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\041\067\264\027\026\222\173\147\106\160\251\226\327\250\023\044
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\100\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\117\160\145\156\124\162
\165\163\164\061\035\060\033\006\003\125\004\003\014\024\117\160
\145\156\124\162\165\163\164\040\122\157\157\164\040\103\101\040
\107\063
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\022\021\040\346\370\114\374\044\260\276\005\100\254\332\203
\033\064\140\077
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Certplus Root CA G1"
# Issuer: CN=Certplus Root CA G1,O=Certplus,C=FR
# Serial Number:11:20:55:83:e4:2d:3e:54:56:85:2d:83:37:b7:2c:dc:46:11
#
# Subject: CN=Certplus Root CA G1,O=Certplus,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): 7f:09:9c:f7:d9:b9:5c:69:69:56:d5:37:3e:14:0d:42
# Fingerprint (SHA1): 22:fd:d0:b7:fd:a2:4e:0d:ac:49:2c:a0:ac:a6:7b:6a:1f:e3:f7:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
```

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\125\203\344\055\076\124\126\205\055\203\067\267
\054\334\106\021
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\005\153\060\202\003\123\240\003\002\001\002\002\022\021
\040\125\203\344\055\076\124\126\205\055\203\067\267\054\334\106
\021\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
```

\060\036\027\015\061\064\060\065\062\066\060\060\060\060\060\060
\132\027\015\063\070\060\061\061\065\060\060\060\060\060\060\132
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\332\120\207\266\332\270\251\076\235\144\372\126\063\232\126
\075\026\345\003\225\262\064\034\232\155\142\005\324\330\217\347
\211\144\237\272\333\144\213\144\346\171\052\141\315\257\217\132
\211\221\145\271\130\374\264\003\137\221\077\055\020\025\340\176
\317\274\374\177\103\147\250\255\136\066\043\330\230\263\115\363
\103\236\071\174\052\374\354\210\325\210\356\160\275\205\026\055
\352\113\211\074\243\161\102\376\034\375\323\034\055\020\270\206
\124\352\103\270\333\306\207\332\250\256\200\045\317\172\046\035
\252\221\260\110\157\256\265\336\236\330\327\372\000\375\306\217
\320\121\273\142\175\244\261\214\262\377\040\021\272\065\143\005
\206\107\140\103\063\220\366\107\242\003\117\226\115\235\117\301
\352\352\234\242\376\064\056\336\267\312\033\166\244\267\255\237
\351\250\324\170\077\170\376\362\070\011\066\035\322\026\002\310
\354\052\150\257\365\216\224\357\055\023\172\036\102\112\035\025
\061\256\014\004\127\374\141\163\363\061\126\206\061\200\240\304
\021\156\060\166\343\224\360\137\004\304\254\207\162\211\230\305
\235\314\127\010\232\364\014\374\175\172\005\072\372\107\200\071
\266\317\204\023\167\157\047\352\377\226\147\027\010\155\351\015
\326\043\120\060\260\025\164\023\076\345\057\377\016\315\304\013
\112\135\360\330\000\063\111\146\353\241\030\174\131\056\075\050
\271\141\161\313\265\245\272\270\352\334\342\160\157\010\152\334
\207\147\064\357\337\060\162\335\363\311\077\043\377\065\341\276
\041\051\040\060\201\344\031\245\040\351\045\312\163\061\164\051
\276\342\102\325\363\262\046\146\307\150\375\031\263\347\040\223
\231\350\135\340\136\207\347\106\350\045\234\012\051\044\324\315
\130\206\122\100\044\262\173\017\230\022\040\044\366\220\154\107
\310\015\273\030\040\056\331\375\374\213\362\051\352\207\164\225
\340\102\120\170\204\004\101\141\260\364\041\043\217\055\313\050
\041\362\152\154\364\032\246\305\024\264\067\145\117\225\375\200
\310\370\162\345\045\153\304\140\261\173\155\216\112\212\163\316
\131\373\160\172\163\006\023\331\323\164\067\044\101\012\021\157
\227\334\347\344\176\241\275\025\362\272\207\017\075\150\212\026
\007\002\003\001\000\001\243\143\060\141\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125
\035\016\004\026\004\024\250\301\300\233\221\250\103\025\174\135
\006\047\264\052\121\330\227\013\201\261\060\037\006\003\125\035
\043\004\030\060\026\200\024\250\301\300\233\221\250\103\025\174
\135\006\047\264\052\121\330\227\013\201\261\060\015\006\011\052
\206\110\206\367\015\001\001\015\005\000\003\202\002\001\000\234

\126\157\001\176\321\275\114\365\212\306\360\046\037\344\340\070
\030\314\062\303\051\073\235\101\051\064\141\306\327\360\000\241
\353\244\162\217\224\027\274\023\054\165\264\127\356\012\174\011
\172\334\325\312\241\320\064\023\370\167\253\237\345\376\330\036
\164\212\205\007\217\177\314\171\172\312\226\315\315\375\117\373
\375\043\015\220\365\364\136\323\306\141\175\236\021\340\002\356
\011\004\331\007\335\246\212\267\014\203\044\273\203\120\222\376
\140\165\021\076\330\235\260\212\172\265\340\235\233\313\220\122
\113\260\223\052\324\076\026\063\345\236\306\145\025\076\144\073
\004\077\333\014\217\137\134\035\151\037\257\363\351\041\214\363
\357\227\366\232\267\031\266\204\164\234\243\124\265\160\116\143
\330\127\135\123\041\233\100\222\103\372\326\167\125\063\117\144
\325\373\320\054\152\216\155\045\246\357\205\350\002\304\123\076
\271\236\207\274\314\065\032\336\241\351\212\143\207\145\036\021
\052\333\143\167\227\024\276\232\024\231\021\262\300\356\260\117
\370\024\041\062\103\117\237\253\242\313\250\017\252\073\006\125
\306\022\051\127\010\324\067\327\207\047\255\111\131\247\221\253
\104\172\136\215\160\333\227\316\110\120\261\163\223\366\360\203
\140\371\315\361\341\061\375\133\174\161\041\143\024\024\252\257
\305\336\223\176\150\261\354\042\242\252\220\165\236\265\103\162
\352\144\243\204\113\375\014\250\046\153\161\227\356\126\143\146
\350\102\124\371\307\035\337\320\217\133\337\310\060\157\210\376
\015\304\063\034\123\250\243\375\110\020\362\344\012\116\341\025
\127\374\156\144\060\302\125\021\334\352\251\315\112\124\254\051
\143\104\317\112\100\240\326\150\131\033\063\371\357\072\213\333
\040\222\334\102\204\277\001\253\207\300\325\040\202\333\306\271
\203\205\102\134\017\103\073\152\111\065\325\230\364\025\277\372
\141\201\014\011\040\030\322\320\027\014\313\110\000\120\351\166
\202\214\144\327\072\240\007\125\314\036\061\300\357\072\264\145
\373\343\277\102\153\236\017\250\275\153\230\334\330\333\313\213
\244\335\327\131\364\156\335\376\252\303\221\320\056\102\007\300
\014\115\123\315\044\261\114\133\036\121\364\337\351\222\372

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Certplus Root CA G1"

Issuer: CN=Certplus Root CA G1,O=Certplus,C=FR

Serial Number:11:20:55:83:e4:2d:3e:54:56:85:2d:83:37:b7:2c:dc:46:11

Subject: CN=Certplus Root CA G1,O=Certplus,C=FR

Not Valid Before: Mon May 26 00:00:00 2014

Not Valid After: Fri Jan 15 00:00:00 2038

Fingerprint (MD5): 7f:09:9c:f7:d9:b9:5c:69:69:56:d5:37:3e:14:0d:42

Fingerprint (SHA1): 22:fd:d0:b7:fd:a2:4e:0d:ac:49:2c:a0:ac:a6:7b:6a:1f:e3:f7:66

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\042\375\320\267\375\242\116\015\254\111\054\240\254\246\173\152
\037\343\367\146
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\177\011\234\367\331\271\134\151\151\126\325\067\076\024\015\102
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\021\040\125\203\344\055\076\124\126\205\055\203\067\267
\054\334\106\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Certplus Root CA G2"
# Issuer: CN=Certplus Root CA G2,O=Certplus,C=FR
# Serial Number: 11:20:d9:91:ce:ae:a3:e8:c5:e7:ff:e9:02:af:cf:73:bc:55
# Subject: CN=Certplus Root CA G2,O=Certplus,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): a7:ee:c4:78:2d:1b:ee:2d:b9:29:ce:d6:a7:96:32:31
#
Fingerprint (SHA1): 4f:65:8e:1f:e9:06:d8:28:02:e9:54:47:41:c9:54:25:5d:69:cc:1a

```

```

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162

```

\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\331\221\316\256\243\350\305\347\377\351\002\257
\317\163\274\125
END
CKA_VALUE
MULTILINE_OCTAL
\060\202\002\034\060\202\001\242\240\003\002\001\002\002\022\021
\040\331\221\316\256\243\350\305\347\377\351\002\257\317\163\274
\125\060\012\006\010\052\206\110\316\075\004\003\003\060\076\061
\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060\017
\006\003\125\004\012\014\010\103\145\162\164\160\154\165\163\061
\034\060\032\006\003\125\004\003\014\023\103\145\162\164\160\154
\165\163\040\122\157\157\164\040\103\101\040\107\062\060\036\027
\015\061\064\060\065\062\066\060\060\060\060\060\060\132\027\015
\063\070\060\061\061\065\060\060\060\060\060\060\132\060\076\061
\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060\017
\006\003\125\004\012\014\010\103\145\162\164\160\154\165\163\061
\034\060\032\006\003\125\004\003\014\023\103\145\162\164\160\154
\165\163\040\122\157\157\164\040\103\101\040\107\062\060\166\060
\020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000
\042\003\142\000\004\315\017\133\126\202\337\360\105\032\326\255
\367\171\360\035\311\254\226\326\236\116\234\037\264\102\021\312
\206\277\155\373\205\243\305\345\031\134\327\356\246\077\151\147
\330\170\342\246\311\304\333\055\171\056\347\213\215\002\157\061
\042\115\006\343\140\162\105\235\016\102\167\236\316\317\345\177
\205\233\030\344\374\314\056\162\323\026\223\116\312\231\143\134
\241\005\052\154\006\243\143\060\141\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\332\203\143\002\171\216\332\114\306\074\043
\024\330\217\303\040\253\050\140\131\060\037\006\003\125\035\043
\004\030\060\026\200\024\332\203\143\002\171\216\332\114\306\074
\043\024\330\217\303\040\253\050\140\131\060\012\006\010\052\206
\110\316\075\004\003\003\003\150\000\060\145\002\060\160\376\260
\013\331\367\203\227\354\363\125\035\324\334\263\006\016\376\063
\230\235\213\071\220\153\224\041\355\266\327\135\326\114\327\041
\247\347\277\041\017\053\315\367\052\334\205\007\235\002\061\000
\206\024\026\345\334\260\145\302\300\216\024\237\277\044\026\150
\345\274\371\171\151\334\255\105\053\367\266\061\163\314\006\245

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\123\223\221\032\223\256\160\152\147\272\327\236\345\141\032\137
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Certplus Root CA G2"
# Issuer: CN=Certplus Root CA G2,O=Certplus,C=FR
# Serial Number:11:20:d9:91:ce:ae:a3:e8:c5:e7:ff:e9:02:af:cf:73:bc:55
# Subject: CN=Certplus Root CA G2,O=Certplus,C=FR
# Not Valid Before: Mon May 26 00:00:00 2014
# Not Valid After: Fri Jan 15 00:00:00 2038
# Fingerprint (MD5): a7:ee:c4:78:2d:1b:ee:2d:b9:29:ce:d6:a7:96:32:31
# Fingerprint (SHA1): 4f:65:8e:1f:e9:06:d8:28:02:e9:54:47:41:c9:54:25:5d:69:cc:1a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certplus Root CA G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\117\145\216\037\351\006\330\050\002\351\124\107\101\311\124\045
\135\151\314\032
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\247\356\304\170\055\033\356\055\271\051\316\326\247\226\062\061
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\014\010\103\145\162\164\160\154
\165\163\061\034\060\032\006\003\125\004\003\014\023\103\145\162
\164\160\154\165\163\040\122\157\157\164\040\103\101\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\040\331\221\316\256\243\350\305\347\377\351\002\257
\317\163\274\125
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Government Root Certification
  Authority"
# Issuer: O=Government Root Certification Authority,C=TW

```



```
# Serial Number:b6:4b:88:07:e2:23:ee:c8:5c:12:ad:a6:0e:06:a1:f2
# Subject: O=Government Root Certification Authority,C=TW
# Not Valid Before: Fri Sep 28 08:58:51 2012
# Not Valid After: Thu Dec 31 15:59:59 2037
# Fingerprint (MD5): 2f:d4:2d:cd:86:7f:36:b0:5f:1c:e0:53:8d:b6:a2:5b
# Fingerprint (SHA1): b0:91:aa:91:38:47:f3:13:d7:27:bc:ef:c8:17:9f:08:6f:3a:8c:0f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Government Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\266\113\210\007\342\043\356\310\134\022\255\246\016
\006\241\362
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\113\060\202\003\063\240\003\002\001\002\002\021\000
\266\113\210\007\342\043\356\310\134\022\255\246\016\006\241\362
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061\060
\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156\155
\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\060\036\027\015\061\062\060\071\062\070\060\070\065\070\065\061
\132\027\015\063\067\061\062\063\061\061\065\065\071\065\071\132
\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
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\001\000\266\377\227\074\201\276\001\130\044\047\257\216\001\053
\326\162\222\060\062\033\137\233\174\324\324\177\350\241\140\163
\060\127\020\000\372\120\226\044\376\120\346\214\072\225\321\127
\171\204\325\147\123\014\052\202\076\030\134\270\060\046\032\326
\136\306\055\262\004\121\016\357\337\014\143\107\353\304\022\010
\121\053\231\161\136\325\151\173\341\135\311\167\035\040\354\126
\216\345\141\140\055\374\351\034\200\337\372\152\203\273\005\265
\036\043\022\234\202\312\012\363\024\035\040\344\006\217\103\044
\231\237\266\012\223\132\163\033\026\071\276\005\266\361\214\245
\144\222\217\005\344\134\166\367\071\303\317\055\275\016\330\313
\250\016\061\233\311\106\017\147\123\103\004\217\310\262\310\203
\200\137\272\362\017\253\201\065\242\040\041\227\316\017\211\064
\170\017\317\037\116\351\373\214\050\074\336\064\347\355\237\322
\146\365\305\312\061\170\322\316\120\321\140\202\143\235\340\114
\367\007\256\203\064\235\111\111\103\324\176\275\055\342\352\307
\161\145\200\010\344\066\236\171\160\012\074\207\051\351\344\222
\224\352\006\222\051\047\170\346\255\327\075\351\012\013\136\364
\340\326\206\235\055\162\313\213\144\126\346\364\256\170\245\240
\071\063\130\074\334\250\217\215\264\152\055\375\210\163\351\225
\120\163\004\337\021\210\076\102\326\002\164\373\054\304\157\274
\154\326\340\200\157\321\206\245\062\127\003\326\115\364\116\012
\231\042\166\176\112\100\202\370\311\344\116\313\123\055\307\261
\266\342\323\302\165\047\156\271\016\161\262\064\374\277\034\116
\302\075\370\066\351\012\314\130\232\241\030\206\116\342\341\252
\263\163\131\156\136\235\264\302\010\257\257\134\375\244\002\157
\377\270\015\273\325\253\327\156\237\032\117\221\100\360\037\106
\125\155\240\222\303\211\315\267\261\377\034\263\313\243\234\012
\343\376\315\252\274\001\354\335\124\312\221\335\117\023\207\244
\366\230\357\375\111\326\127\052\074\246\134\366\140\067\277\330
\076\176\116\150\052\043\062\072\276\156\344\042\075\007\044\317
\212\313\233\135\121\263\060\322\161\155\316\106\212\155\174\112
\063\104\332\022\057\066\113\362\351\361\121\011\155\333\152\227
\016\027\002\003\001\000\001\243\102\060\100\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\325\147\035\340\234\172\054\234\313
\305\230\347\035\007\046\052\206\354\164\315\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\220
\073\345\302\123\102\050\352\365\061\116\216\075\221\236\115\011
\363\330\261\122\346\117\254\014\061\041\273\361\352\231\314\203
\374\266\050\344\354\204\007\016\017\116\227\273\157\150\106\217
\016\121\025\225\370\072\073\037\137\202\016\014\161\016\274\221
\117\256\063\056\043\101\364\046\153\117\023\207\372\170\366\056
\302\017\221\005\227\252\152\301\152\237\274\204\236\010\052\047
\335\332\207\027\206\341\263\312\135\355\070\251\051\156\204\336
\106\153\374\047\031\120\245\022\172\214\175\142\374\332\347\314
\274\237\111\257\006\270\047\047\362\211\367\026\075\030\346\275
\336\365\214\022\221\237\343\004\215\376\007\024\032\132\254\071

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\202\033\361\070\031\341\143\343\257\154\266\246\121\027\353\372
\113\353\213\042\366\227\376\020\072\137\224\240\113\123\161\077
\132\341\020\370\162\217\226\200\335\215\002\230\000\141\075\215
\274\055\261\107\314\332\135\341\040\247\214\061\134\361\343\332
\271\012\206\107\310\241\075\007\243\074\246\163\156\224\221\355
\156\044\072\371\311\060\321\007\250\201\175\046\175\175\204\337
\206\311\213\345\256\015\036\276\211\110\121\025\203\230\226\057
\112\353\163\064\327\164\315\311\157\320\302\272\053\366\232\376
\231\335\140\024\216\033\371\234\071\074\177\103\211\123\350\345
\302\253\276\042\255\047\070\233\167\050\267\243\143\143\247\201
\347\251\151\105\353\216\170\126\314\005\204\307\373\255\266\060
\174\143\005\237\055\214\044\177\113\213\222\374\070\036\237\240
\245\127\263\156\235\330\144\270\160\232\140\122\160\310\251\320
\377\306\234\355\020\141\136\315\203\016\156\350\115\002\101\112
\342\166\004\171\326\124\077\212\230\062\024\240\335\055\234\347
\272\202\161\243\206\125\051\231\322\051\333\165\072\367\333\103
\377\266\133\373\267\176\065\200\216\015\154\256\171\267\066\055
\227\122\241\260\007\234\007\345\053\066\315\003\227\224\275\055
\016\064\006\374\300\026\211\374\067\124\344\326\317\075\023\004
\362\221\331\311\066\056\076\305\132\320\245\114\202\303\377\056
\174\046\166\367\363\375\105\242\245\156\125\256\056\314\317\054
\211\064\332\366\015\347\221\250\020\352\027\235\362\366\354
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Government Root Certification Authority"

Issuer: O=Government Root Certification Authority,C=TW

Serial Number:b6:4b:88:07:e2:23:ee:c8:5c:12:ad:a6:0e:06:a1:f2

Subject: O=Government Root Certification Authority,C=TW

Not Valid Before: Fri Sep 28 08:58:51 2012

Not Valid After: Thu Dec 31 15:59:59 2037

Fingerprint (MD5): 2f:d4:2d:cd:86:7f:36:b0:5f:1c:e0:53:8d:b6:a2:5b

Fingerprint (SHA1): b0:91:aa:91:38:47:f3:13:d7:27:bc:ef:c8:17:9f:08:6f:3a:8c:0f

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Government Root Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\260\221\252\221\070\107\363\023\327\047\274\357\310\027\237\010
\157\072\214\017
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\057\324\055\315\206\177\066\260\137\034\340\123\215\266\242\133

END

CKA_ISSUER

MULTILINE_OCTAL

\060\077\061\013\060\011\006\003\125\004\006\023\002\124\127\061

\060\060\056\006\003\125\004\012\014\047\107\157\166\145\162\156

\155\145\156\164\040\122\157\157\164\040\103\145\162\164\151\146

\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164

\171

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\266\113\210\007\342\043\356\310\134\022\255\246\016

\006\241\362

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "A-Trust-Root-05"

Issuer: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

Serial Number: 1035700 (0xfcdb4)

Subject: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

Not

Valid Before: Mon Sep 23 13:24:11 2013

Not Valid After: Wed Sep 20 11:24:11 2023

Fingerprint (MD5): f4:6f:96:17:87:40:f4:cf:37:d3:18:29:89:76:e6:0a

Fingerprint (SHA1): 2e:66:c9:84:11:81:c0:8f:b1:df:ab:d4:ff:8d:5c:c7:2b:e0:8f:02

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "A-Trust-Root-05"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124

\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165

\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145

\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155

\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145

\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003

\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157

\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101

\055\124\162\165\163\164\055\122\157\157\164\055\060\065

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157
\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\122\157\157\164\055\060\065

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\017\315\264

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\311\060\202\003\261\240\003\002\001\002\002\003\017
\315\264\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157
\157\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017
\101\055\124\162\165\163\164\055\122\157\157\164\055\060\065\060
\036\027\015\061\063\060\071\062\063\061\063\062\064\061\061\132
\027\015\062\063\060\071\062\060\061\061\062\064\061\061\132\060
\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165\163
\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145\162
\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040
\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145\162
\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125
\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157\164
\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101\055
\124\162\165\163\164\055\122\157\157\164\055\060\065\060\202\002
\040\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\015\000\060\202\002\010\002\202\002\001\000\344\373
\214\122\046\245\147\201\204\150\335\202\311\315\250\162\001\131
\042\077\044\351\022\244\222\227\305\120\316\362\105\077\153\104
\005\030\272\173\161\257\346\215\273\155\366\344\363\345\334\274
\344\170\023\043\262\012\104\235\267\275\067\100\326\045\104\120
\211\316\150\322\303\142\247\104\241\043\105\257\137\006\161\166
\106\341\151\377\342\041\340\077\317\062\225\352\210\046\247\040
\254\302\161\135\060\311\014\354\104\055\316\305\145\174\327\007

\176\065\366\015\030\026\115\173\253\363\252\017\175\336\350\214
\224\056\223\320\267\156\110\070\304\002\042\032\337\040\245\202
\143\277\123\325\104\025\006\073\244\073\172\334\266\356\220\213
\100\002\264\237\300\366\161\063\131\246\042\323\260\150\043\077
\375\204\310\226\260\371\160\113\057\064\206\375\045\125\231\321
\315\167\047\070\304\155\134\031\352\353\176\023\206\001\240\020
\100\046\107\037\276\024\276\137\245\270\077\140\241\156\341\041
\216\023\045\170\056\247\172\315\130\257\176\133\254\077\316\017
\263\362\127\174\325\173\155\311\323\374\255\225\255\033\277\207
\230\117\047\346\013\251\150\073\344\054\054\365\024\107\327\251
\135\202\366\342\233\267\040\341\345\032\153\054\170\010\215\154
\165\214\352\067\226\211\235\131\351\164\062\057\030\060\030\072
\004\045\113\006\355\306\147\147\046\200\152\137\201\167\060\036
\236\321\164\217\137\214\300\124\152\354\244\030\141\231\172\035
\371\235\371\350\371\361\357\162\276\316\057\031\222\174\343\050
\257\321\270\270\157\320\140\276\170\130\244\056\067\072\262\047
\211\021\121\242\136\211\274\035\314\127\145\113\111\114\023\020
\002\256\127\276\114\041\361\042\252\036\240\222\324\124\054\270
\233\174\063\150\047\020\052\035\113\377\006\012\002\223\200\207
\031\257\277\250\203\022\020\216\175\020\245\053\220\350\016\340
\024\206\105\366\327\345\126\163\226\037\217\236\074\052\243\032
\136\054\220\146\205\157\001\166\275\263\360\051\310\047\212\251
\251\043\260\325\362\360\312\325\275\266\062\160\314\057\034\131
\277\352\303\006\244\140\337\253\211\156\107\024\357\205\220\153
\150\043\226\116\006\323\261\047\243\003\303\271\331\275\002\001
\003\243\066\060\064\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\021\006\003\125\035\016\004\012\004
\010\100\371\271\147\276\003\322\010\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\003\202\002\001\000\342\052\145
\306\153\132\053\310\250\064\313\227\021\035\046\037\243\262\316
\270\074\053\041\237\230\364\027\037\015\266\173\256\313\020\155
\203\362\143\301\210\256\351\300\122\102\256\067\237\013\231\127
\122\350\105\176\230\224\351\051\107\237\361\007\301\102\010\363
\163\074\252\153\065\263\154\025\053\221\061\033\344\176\222\347
\303\305\246\041\070\337\033\276\321\237\226\015\120\266\365\173
\224\243\055\252\257\267\215\322\073\055\174\202\020\324\152\112
\311\141\243\246\217\247\262\240\331\124\303\227\177\321\211\314
\143\370\331\337\070\130\225\272\001\120\314\012\363\213\111\074
\177\077\075\250\363\150\314\307\230\323\331\065\060\367\016\202
\136\370\020\141\256\274\116\360\053\064\172\242\232\366\333\215
\257\353\003\114\047\303\336\256\154\335\125\024\257\077\035\353
\217\232\266\170\111\356\274\371\036\167\140\002\044\334\336\336
\351\245\373\221\246\034\172\262\111\340\367\277\035\007\256\206
\313\273\331\000\327\313\001\030\357\350\303\217\014\007\060\160
\130\301\362\143\352\214\375\266\255\343\350\007\074\075\133\005
\207\164\313\065\345\357\011\267\273\240\204\151\274\101\161\143
\333\062\234\101\341\137\176\332\166\155\223\243\256\205\372\345

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\214\311\122\254\047\313\140\263\066\054\111\251\004\336\270\047
\053\011\061\304\222\223\351\214\321\244\113\375\276\126\121\260
\330\267\316\235\105\303\033\110\057\321\263\060\367\176\134\251
\133\061\077\345\005\233\341\166\251\327\365\051\206\163\127\034
\275\057\333\327\031\026\364\045\064\361\203\026\264\062\130\013
\261\131\116\343\213\320\243\053\213\033\100\302\367\343\122\250
\116\112\356\165\351\355\143\231\033\006\373\060\215\374\036\127
\231\354\316\024\050\343\240\215\055\353\357\007\036\014\002\216
\214\110\314\210\332\246\255\171\224\264\254\351\014\060\266\377
\006\073\024\161\225\205\373\260\172\313\213\110\131\162\333\120
\000\362\267\215\171\053\315\004\225\222\165\111\002\226\124\242
\035\124\205\273\140\257\175\175\252\263\275\371\160\074\131\172
\301\201\374\254\120\000\030\022\344\265\334\135\330\245\130\136
\035\137\047\151\216\314\333\357\252\127\032\253\204
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for

"A-Trust-Root-05"

Issuer: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

Serial Number: 1035700 (0xfcdb4)

Subject: CN=A-Trust-Root-05,OU=A-Trust-Root-05,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

Not Valid Before: Mon Sep 23 13:24:11 2013

Not Valid After: Wed Sep 20 11:24:11 2023

Fingerprint (MD5): f4:6f:96:17:87:40:f4:cf:37:d3:18:29:89:76:e6:0a

Fingerprint (SHA1): 2e:66:c9:84:11:81:c0:8f:b1:df:ab:d4:ff:8d:5c:c7:2b:e0:8f:02

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "A-Trust-Root-05"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\056\146\311\204\021\201\300\217\261\337\253\324\377\215\134\307
\053\340\217\002
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\364\157\226\027\207\100\364\317\067\323\030\051\211\166\346\012
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
```

```
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\122\157\157
\164\055\060\065\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\122\157\157\164\055\060\065
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\003\017\315\264
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "A-Trust-Qual-02"

Issuer: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

#

Serial Number:14:4d:e4

Subject: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

Not Valid Before: Tue Jul 01 11:23:33 2014

Not Valid After: Mon Jul 01 09:23:33 2024

Fingerprint (MD5): 4b:d4:35:43:a8:b2:43:6d:d7:78:e2:89:a2:a9:39:ab

Fingerprint (SHA1): cd:78:7a:3d:5c:ba:82:07:08:28:48:36:5e:9a:cd:e9:68:33:64:d8

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "A-Trust-Qual-02"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\062
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\024\115\344

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\313\060\202\002\263\240\003\002\001\002\002\003\024
\115\344\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165
\141\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017
\101\055\124\162\165\163\164\055\121\165\141\154\055\060\062\060
\036\027\015\061\064\060\067\060\061\061\061\062\063\063\063\132
\027\015\062\064\060\067\060\061\060\071\062\063\063\063\132\060
\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165\163
\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145\162
\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040
\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145\162
\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125
\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141\154
\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101\055
\124\162\165\163\164\055\121\165\141\154\055\060\062\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\226\221
\253\327\216\260\131\270\001\275\264\036\255\231\375\241\374\352
\014\226\153\217\056\111\110\330\351\344\044\202\341\330\272\314
\353\336\007\134\110\306\031\202\001\107\102\011\341\174\271\237
\256\217\366\356\136\153\250\250\126\210\070\126\263\346\376\311
\235\117\064\070\121\074\234\276\363\254\234\034\310\075\134\232
\204\256\367\224\054\024\262\144\067\140\216\024\260\073\052\315
\211\265\042\257\367\344\177\356\054\053\063\371\216\074\255\114
\242\127\017\373\202\305\216\037\001\337\123\214\301\025\244\335
\356\232\222\022\322\050\351\142\027\045\140\061\357\317\061\224
\363\175\363\344\074\041\253\220\374\155\317\143\247\306\022\000

\161\111\327\034\310\240\355\143\232\175\343\217\050\335\140\371
\330\346\026\253\046\321\320\057\275\347\015\011\337\156\324\354
\345\070\123\364\144\013\272\132\314\200\265\070\131\354\200\131
\145\204\061\152\137\125\221\114\044\345\044\232\203\204\172\276
\200\361\356\137\040\007\252\167\027\154\013\342\125\252\226\170
\010\002\236\227\360\053\256\130\365\200\120\077\376\073\002\003
\001\000\001\243\066\060\064\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\021\006\003\125\035\016\004
\012\004\010\102\075\053\044\246\301\105\316\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\141
\061\363\210\065\011\270\136\234\305\350\071\244\072\146\377\002
\264\227\035\376\113\071\272\205\230\203\050\240\332\366\116\114
\263\255\104\312\374\321\076\231\332\346\327\224\137\166\333\073
\221\225\152\374\200\237\101\041\136\150\373\326\150\005\152\342
\231\107\377\156\216\216\363\023\126\376\303\176\007\317\005\114
\103\132\251\102\270\071\303\234\360\025\103\354\250\376\216\142
\004\016\156\122\123\033\247\234\347\154\073\145\307\001\177\346
\005\252\162\177\341\053\024\224\010\375\156\210\343\310\224\247
\336\126\373\021\230\027\011\001\332\042\305\063\077\041\315\164
\245\253\311\060\143\210\333\112\047\002\273\320\144\005\004\155
\164\013\003\307\054\362\166\261\174\136\201\243\176\224\366\171
\072\302\176\352\361\123\327\205\130\236\220\034\235\327\261\172
\364\017\232\207\102\052\303\204\217\177\320\152\065\022\036\325
\214\161\214\070\102\232\065\255\335\252\062\023\166\105\006\341
\243\133\352\366\212\226\377\274\145\065\373\152\062\313\141\135
\331\323\046\210\304\073\200\150\126\137\325\372\201\142\335

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "A-Trust-Qual-02"

Issuer: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

Serial Number:14:4d:e4

Subject: CN=A-Trust-Qual-02,OU=A-Trust-Qual-02,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr GmbH,C=AT

Not Valid Before: Tue Jul 01 11:23:33 2014

Not Valid After: Mon Jul 01 09:23:33 2024

Fingerprint (MD5): 4b:d4:35:43:a8:b2:43:6d:d7:78:e2:89:a2:a9:39:ab

Fingerprint (SHA1): cd:78:7a:3d:5c:ba:82:07:08:28:48:36:5e:9a:cd:e9:68:33:64:d8

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-02"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\315\170\172\075\134\272\202\007\010\050\110\066\136\232\315\351
\150\063\144\330
```

```
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\113\324\065\103\250\262\103\155\327\170\342\211\242\251\071\253
```

```
END
```

```
CKA_ISSUER
```

```
MULTILINE_OCTAL
```

```
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\062\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\062
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\003\024\115\344
```

```
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
```

```
# Certificate "Thailand National Root Certification Authority - G1"
```

```
# Issuer:
```

```
CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
```

```
# Serial Number:51:52:c5:8c
```

```
# Subject: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
```

```
# Not Valid Before: Wed Mar 27 09:40:22 2013
```

```
# Not Valid After: Thu Mar 27 10:10:22 2036
```

```
# Fingerprint (MD5): da:9d:b6:26:4a:e5:22:a0:bb:8d:a4:f7:bc:0d:25:cc
```

```
# Fingerprint (SHA1): 66:f2:dc:fb:3f:81:4d:de:e9:b3:20:6f:11:de:fe:1b:fb:df:e1:32
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Thailand National Root Certification Authority - G1"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110
\061\111\060\107\006\003\125\004\012\014\100\105\154\145\143\164
\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116
\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\061
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110
\061\111\060\107\006\003\125\004\012\014\100\105\154\145\143\164
\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116
\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\061
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\004\121\122\305\214
```

END

CKA_VALUE MULTILINE_OCTAL

```
\060\202\006\201\060\202\004\151\240\003\002\001\002\002\004\121
\122\305\214\060\015\006\011\052\206\110\206\367\015\001\001\015
\005\000\060\201\317\061\013\060\011\006\003\125\004\006\023\002
\124\110\061\111\060\107\006\003\125\004\012\014\100\105\154\145
\143\164\162\157\156\151\143\040\124\162\141\156\163\141\143\164
\151\157\156\163\040\104\145\166\145\154\157\160\155\145\156\164
\040\101\147\145\156\143\171\040\050\120\165\142\154\151\143\040
\117\162\147\141\156\151\172\141\164\151\157\156\051\061\067\060
\065\006\003\125\004\013\014\056\124\150\141\151\154\141\156\144
\040\116\141\164\151\157\156\141\154\040\122\157\157\164\040\103
```

\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\061\074\060\072\006\003\125\004\003\014
\063\124\150\141\151\154\141\156\144\040\116\141\164\151\157\156
\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
\055\040\107\061\060\036\027\015\061\063\060\063\062\067\060\071
\064\060\062\062\132\027\015\063\066\060\063\062\067\061\060\061
\060\062\062\132\060\201\317\061\013\060\011\006\003\125\004\006
\023\002\124\110\061\111\060\107\006\003\125\004\012\014\100\105
\154\145\143\164\162\157\156\151\143\040\124\162\141\156\163\141
\143\164\151\157\156\163\040\104\145\166\145\154\157\160\155\145
\156\164\040\101\147\145\156\143\171\040\050\120\165\142\154\151
\143\040\117\162\147\141\156\151\172\141\164\151\157\156\051\061
\067\060\065\006\003\125\004\013\014\056\124\150\141\151\154\141
\156\144\040\116\141\164\151\157\156\141\154\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\061\074\060\072\006\003\125\004
\003\014\063\124\150\141\151\154\141\156\144\040\116\141\164\151
\157\156\141\154\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\061\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\326\272\112\344\214\361\232\056\211
\027\302\100\363\202\000\061\376\023\002\172\145\312\010\330\253
\042\261\002\232\161\064\112\144\131\202\345\102\106\353\043\366
\213\132\042\261\317\066\347\163\155\024\155\367\111\224\136\357
\347\064\131\147\366\250\317\126\131\043\204\125\342\373\032\021
\312\243\371\212\253\147\036\202\023\320\213\071\232\277\017\302
\017\074\326\141\330\352\233\317\025\016\276\324\360\314\077\163
\234\004\364\242\161\163\175\200\260\235\061\361\006\371\260\023
\345\210\111\060\366\026\175\210\127\051\072\054\242\214\220\230
\316\021\026\316\115\121\017\374\307\262\314\362\146\030\041\200
\005\210\255\271\320\305\013\170\001\376\116\322\010\213\066\361
\126\317\156\272\163\046\013\326\367\245\106\152\151\116\226\266
\247\006\126\314\346\056\061\237\156\213\355\234\000\125\107\364
\173\246\172\266\337\001\035\110\004\013\253\102\302\160\112\224
\275\374\254\121\362\253\077\326\353\140\337\010\377\365\022\262
\211\052\172\271\105\231\045\175\174\357\317\025\320\110\054\020
\326\324\274\010\047\265\206\051\324\343\323\304\052\220\022\366
\242\052\371\213\257\026\377\002\363\172\156\317\242\313\152\264
\340\162\013\373\076\205\177\342\207\340\057\103\043\370\205\311
\231\352\326\100\336\240\373\347\336\166\377\217\200\071\353\147
\022\023\246\373\345\243\374\046\200\131\143\362\322\043\353\037
\306\110\163\121\235\267\263\240\133\253\152\210\371\277\373\161
\121\334\156\266\166\357\260\133\362\313\210\060\272\006\333\033
\101\323\125\264\255\264\352\040\041\374\324\167\266\075\133\241
\014\055\045\041\122\043\122\327\064\123\155\026\004\122\146\370
\325\352\361\054\130\362\073\261\361\176\103\265\334\202\270\136

\343\207\341\243\244\137\347\211\016\274\234\351\051\072\045\247
\330\117\152\207\324\226\104\227\030\026\207\302\161\122\205\316
\172\214\255\036\147\276\272\055\277\243\041\047\305\347\060\351
\006\231\033\260\014\343\276\122\145\223\115\141\113\362\070\346
\217\030\361\002\122\230\056\246\016\035\005\317\046\354\001\043
\007\066\366\340\023\067\251\107\210\003\207\107\313\335\262\001
\037\137\144\033\004\233\305\002\003\001\000\001\243\143\060\141
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\037\006\003\125\035\043\004\030\060\026\200\024\177\043
\166\267\203\052\161\367\054\321\210\017\335\114\137\062\012\150
\273\177\060\035\006\003\125\035\016\004\026\004\024\177\043\166
\267\203\052\161\367\054\321\210\017\335\114\137\062\012\150\273
\177\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000
\003\202\002\001\000\015\145\034\132\007\251\236\254\114\311\137
\117\335\061\154\331\342\123\035\077\221\215\132\263\214\275\064
\236\056\115\312\130\323\257\131\142\111\066\163\260\141\166\021
\276\213\066\307\224\252\370\066\151\007\040\337\134\057\013\366
\216\002\026\357\122\006\070\335\355\064\140\252\207\136\027\316
\070\155\120\115\345\337\345\121\276\035\004\226\364\334\352\345
\331\352\216\336\237\164\313\202\224\123\201\154\373\136\054\325
\241\165\226\115\373\060\134\315\141\240\236\241\314\202\271\122
\162\013\207\143\141\173\141\064\164\266\056\335\342\341\207\265
\111\024\141\025\107\112\113\076\167\271\010\322\066\117\130\147
\102\211\200\170\132\022\043\355\105\073\335\277\040\046\124\374
\133\077\140\001\030\101\343\147\165\023\267\052\025\160\314\313
\171\322\024\370\363\302\340\052\020\367\371\102\330\334\332\012
\323\001\005\333\127\230\311\266\353\014\231\012\312\214\175\357
\073\026\050\300\367\137\341\107\121\323\370\006\105\007\360\013
\272\302\234\230\354\322\177\115\176\375\006\374\163\302\302\125
\022\142\320\043\104\337\042\344\370\171\347\245\020\116\076\311
\216\252\203\351\066\352\253\171\306\005\204\315\226\150\174\164
\254\077\062\377\256\311\100\354\217\120\277\120\250\267\116\325
\255\066\152\327\047\063\372\347\330\055\331\067\230\205\033\246
\014\352\173\020\023\160\036\236\210\305\334\076\216\271\015\125
\337\001\316\320\111\166\121\333\020\142\170\101\255\151\143\245
\225\011\267\030\006\157\375\004\147\324\020\017\116\333\073\137
\014\143\174\353\144\275\156\113\000\250\201\372\222\062\206\060
\214\011\277\175\130\077\145\015\251\067\321\105\343\146\151\304
\150\364\142\251\250\036\067\331\056\231\111\240\260\006\214\100
\177\205\261\365\361\114\113\070\240\010\314\052\331\226\300\354
\300\015\074\056\105\127\303\357\225\332\266\313\356\133\145\250
\053\062\257\311\047\371\025\123\067\165\130\037\113\352\227\242
\042\134\147\126\342\240\314\065\304\254\303\061\100\271\234\003
\172\275\311\110\016\352\152\025\332\234\274\170\157\311\025\347
\144\003\331\111\023\146\105\113\055\364\204\231\263\352\247\022
\225\345\223\056\374

END

```

CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Thailand National Root Certification Authority - G1"
# Issuer: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
# Serial Number:51:52:c5:8c
#
Subject: CN=Thailand National Root Certification Authority - G1,OU=Thailand National Root Certification
Authority,O=Electronic Transactions Development Agency (Public Organization),C=TH
# Not Valid Before: Wed Mar 27 09:40:22 2013
# Not Valid After: Thu Mar 27 10:10:22 2036
# Fingerprint (MD5): da:9d:b6:26:4a:e5:22:a0:bb:8d:a4:f7:bc:0d:25:cc
# Fingerprint (SHA1): 66:f2:dc:fb:3f:81:4d:de:e9:b3:20:6f:11:de:fe:1b:fb:df:e1:32
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thailand National Root Certification Authority - G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\146\362\334\373\077\201\115\336\351\263\040\157\021\336\376\033
\373\337\341\062
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\235\266\046\112\345\042\240\273\215\244\367\274\015\045\314
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\124\110
\061\111\060\107\006\003\125\004\012\014\100\105\154\145\143\164
\162\157\156\151\143\040\124\162\141\156\163\141\143\164\151\157
\156\163\040\104\145\166\145\154\157\160\155\145\156\164\040\101
\147\145\156\143\171\040\050\120\165\142\154\151\143\040\117\162
\147\141\156\151\172\141\164\151\157\156\051\061\067\060\065\006
\003\125\004\013\014\056\124\150\141\151\154\141\156\144\040\116
\141\164\151\157\156\141\154\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\061\074\060\072\006\003\125\004\003\014\063\124
\150\141\151\154\141\156\144\040\116\141\164\151\157\156\141\154
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\121\122\305\214

```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Certification Authority of WoSign"
# Issuer: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN
# Serial Number:5e:68:d6:11:71:94:63:50:56:00:68:f3:3e:c9:c5:91
# Subject: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Aug 08 01:00:01 2009
# Not Valid After: Mon Aug 08 01:00:01 2039
# Fingerprint (MD5): a1:f2:f9:b5:d2:c8:7a:74:b8:f3:05:f1:d7:e1:84:8d
# Fingerprint (SHA1): b9:42:94:bf:91:ea:8f:b6:4b:e6:10:97:c7:fb:00:13:59:b6:76:cb
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
```

```
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\136\150\326\021\161\224\143\120\126\000\150\363\076\311
\305\221
```

```
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\166\060\202\003\136\240\003\002\001\002\002\020\136
\150\326\021\161\224\143\120\126\000\150\363\076\311\305\221\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\125
```


\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103
\101\040\114\151\155\151\164\145\144\061\052\060\050\006\003\125
\004\003\023\041\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\040\157\146\040\127
\157\123\151\147\156\060\036\027\015\060\071\060\070\060\070\060
\061\060\060\060\061\132\027\015\063\071\060\070\060\070\060\061
\060\060\060\061\132\060\125\061\013\060\011\006\003\125\004\006
\023\002\103\116\061\032\060\030\006\003\125\004\012\023\021\127
\157\123\151\147\156\040\103\101\040\114\151\155\151\164\145\144
\061\052\060\050\006\003\125\004\003\023\041\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\157\146\040\127\157\123\151\147\156\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\275\312\215
\254\270\221\025\126\227\173\153\134\172\302\336\153\331\241\260
\303\020\043\372\247\241\262\314\061\372\076\331\246\051\157\026
\075\340\153\370\270\100\137\333\071\250\000\172\213\240\115\124
\175\302\042\170\374\216\011\270\250\205\327\314\225\227\113\164
\330\236\176\360\000\344\016\211\256\111\050\104\032\020\231\062
\017\045\210\123\244\015\263\017\022\010\026\013\003\161\047\034
\177\341\333\322\375\147\150\304\005\135\012\016\135\160\327\330
\227\240\274\123\101\232\221\215\364\236\066\146\172\176\126\301
\220\137\346\261\150\040\066\244\214\044\054\054\107\013\131\166
\146\060\265\276\336\355\217\370\235\323\273\001\060\346\362\363
\016\340\054\222\200\363\205\371\050\212\264\124\056\232\355\367
\166\374\025\150\026\353\112\154\353\056\022\217\324\317\376\014
\307\134\035\013\176\005\062\276\136\260\011\052\102\325\311\116
\220\263\131\015\273\172\176\315\325\010\132\264\177\330\034\151
\021\371\047\017\173\006\257\124\203\030\173\341\335\124\172\121
\150\156\167\374\306\277\122\112\146\106\241\262\147\032\273\243
\117\167\240\276\135\377\374\126\013\103\162\167\220\312\236\371
\362\071\365\015\251\364\352\327\347\263\020\057\060\102\067\041
\314\060\160\311\206\230\017\314\130\115\203\273\175\345\032\245
\067\215\266\254\062\227\000\072\143\161\044\036\236\067\304\377
\164\324\067\300\342\376\210\106\140\021\335\010\077\120\066\253
\270\172\244\225\142\152\156\260\312\152\041\132\151\363\363\373
\035\160\071\225\363\247\156\246\201\211\241\210\305\073\161\312
\243\122\356\203\273\375\240\167\364\344\157\347\102\333\155\112
\231\212\064\110\274\027\334\344\200\010\042\266\362\061\300\077
\004\076\353\237\040\171\326\270\006\144\144\002\061\327\251\315
\122\373\204\105\151\011\000\052\334\125\213\304\006\106\113\300
\112\035\011\133\071\050\375\251\253\316\000\371\056\110\113\046
\346\060\114\245\130\312\264\104\202\117\347\221\036\063\303\260
\223\377\021\374\201\322\312\037\161\051\335\166\117\222\045\257
\035\201\267\017\057\214\303\006\314\057\047\243\112\344\016\231
\272\174\036\105\037\177\252\031\105\226\375\374\075\002\003\001
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377

\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\341\146\317\016\321\361\263\113\267\006\040\024\376\207
\022\325\366\376\373\076\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\002\001\000\250\313\162\100\262\166
\301\176\173\374\255\144\343\062\173\314\074\266\135\106\323\365
\054\342\160\135\310\056\330\006\175\230\321\013\041\240\211\131
\044\001\235\371\257\011\175\012\043\202\064\325\374\174\162\231
\271\243\327\124\364\352\122\160\016\305\365\326\073\341\072\011
\062\346\041\071\223\275\263\025\352\117\152\364\365\213\077\057
\174\215\130\056\305\341\071\240\076\307\075\112\163\236\100\172
\300\053\141\251\147\311\363\044\271\263\155\125\054\132\035\236
\045\162\316\013\255\252\307\125\142\013\276\373\143\263\141\104
\043\243\313\341\032\016\367\232\006\115\336\324\043\116\041\226
\133\071\133\127\035\057\135\010\136\011\171\377\174\227\265\115
\203\256\015\326\346\243\171\340\063\320\231\226\002\060\247\076
\377\322\243\103\077\005\132\006\352\104\002\332\174\370\110\320
\063\251\371\007\307\225\341\365\076\365\135\161\272\362\225\251
\164\210\141\131\343\277\312\132\023\272\162\264\214\135\066\207
\351\246\305\074\023\277\336\320\104\046\356\267\354\056\160\372
\327\235\267\254\345\305\100\132\346\327\154\173\054\303\126\233
\107\315\013\316\372\033\264\041\327\267\146\270\364\045\060\213
\134\015\271\352\147\262\364\155\256\325\241\236\117\330\237\351
\047\002\260\035\006\326\217\343\373\110\022\237\177\021\241\020
\076\114\121\072\226\260\321\023\361\307\330\046\256\072\312\221
\304\151\235\337\001\051\144\121\157\150\332\024\354\010\101\227
\220\215\320\262\200\362\317\302\075\277\221\150\305\200\147\036
\304\140\023\125\325\141\231\127\174\272\225\017\141\111\072\312
\165\274\311\012\223\077\147\016\022\362\050\342\061\033\300\127
\026\337\010\174\031\301\176\017\037\205\036\012\066\174\133\176
\047\274\172\277\340\333\364\332\122\275\336\014\124\160\061\221
\103\225\310\274\360\076\335\011\176\060\144\120\355\177\001\244
\063\147\115\150\117\276\025\357\260\366\002\021\242\033\023\045
\072\334\302\131\361\343\134\106\273\147\054\002\106\352\036\110
\246\346\133\331\265\274\121\242\222\226\333\252\306\067\042\246
\376\314\040\164\243\055\251\056\153\313\300\202\021\041\265\223
\171\356\104\206\276\327\036\344\036\373

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Certification Authority of WoSign"

Issuer: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN

Serial Number:5e:68:d6:11:71:94:63:50:56:00:68:f3:3e:c9:c5:91

Subject: CN=Certification Authority of WoSign,O=WoSign CA Limited,C=CN

```
# Not Valid Before: Sat Aug 08 01:00:01 2009
# Not Valid After: Mon Aug 08 01:00:01 2039
# Fingerprint (MD5): a1:f2:f9:b5:d2:c8:7a:74:b8:f3:05:f1:d7:e1:84:8d
#
Fingerprint (SHA1): b9:42:94:bf:91:ea:8f:b6:4b:e6:10:97:c7:fb:00:13:59:b6:76:cb
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certification Authority of WoSign"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\271\102\224\277\221\352\217\266\113\346\020\227\307\373\000\023
\131\266\166\313
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\362\371\265\322\310\172\164\270\363\005\361\327\341\204\215
END
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\052\060\050\006
\003\125\004\003\023\041\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\157\146
\040\127\157\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\136\150\326\021\161\224\143\120\126\000\150\363\076\311
\305\221
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "CA "
# Issuer: CN=CA ,O=WoSign CA Limited,C=CN
# Serial Number:50:70:6b:cd:d8:13:fc:1b:4e:3b:33:72:d2:11:48:8d
# Subject: CN=CA ,O=WoSign CA Limited,C=CN
# Not Valid Before: Sat Aug 08 01:00:01 2009
# Not Valid After: Mon Aug 08 01:00:01 2039
# Fingerprint (MD5): 78:83:5b:52:16:76:c4:24:3b:83:78:e8:ac:da:9a:93
# Fingerprint (SHA1): 16:32:47:8d:89:f9:21:3a:92:00:85:63:f5:a4:a7:d3:12:40:8a:d6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "CA "
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\120\160\153\315\330\023\374\033\116\073\063\162\322\021
\110\215
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\130\060\202\003\100\240\003\002\001\002\002\020\120
\160\153\315\330\023\374\033\116\073\063\162\322\021\110\215\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\106
\061\013\060\011\006\003\125\004\006\023\002\103\116\061\032\060
\030\006\003\125\004\012\023\021\127\157\123\151\147\156\040\103
\101\040\114\151\155\151\164\145\144\061\033\060\031\006\003\125
\004\003\014\022\103\101\040\346\262\203\351\200\232\346\240\271
\350\257\201\344\271\246\060\036\027\015\060\071\060\070\060\070
\060\061\060\060\060\061\132\027\015\063\071\060\070\060\070\060
\061\060\060\060\061\132\060\106\061\013\060\011\006\003\125\004
\006\023\002\103\116\061\032\060\030\006\003\125\004\012\023\021
\127\157\123\151\147\156\040\103\101\040\114\151\155\151\164\145
\144\061\033\060\031\006\003\125\004\003\014\022\103\101\040\346
\262\203\351\200\232\346\240\271\350\257\201\344\271\246\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\320
\111\041\036\045\374\207\301\052\302\254\333\166\206\006\116\347
\320\164\064\334\355\145\065\374\120\326\210\077\244\360\177\353
\017\137\171\057\211\261\375\274\143\130\067\223\233\070\370\267
\133\251\372\330\161\307\264\274\200\227\215\154\113\361\120\325
\052\051\252\250\031\172\226\346\225\216\164\355\227\012\127\165
\364\005\333\155\013\071\271\001\177\252\366\326\332\154\346\005
\340\244\115\122\374\333\320\164\267\021\214\173\215\117\377\207
\203\256\377\005\003\023\127\120\067\376\214\226\122\020\114\137
\277\224\161\151\331\226\076\014\103\117\276\060\300\237\071\164
```

\117\006\105\135\243\326\126\071\150\007\314\207\117\120\167\223
\161\331\104\010\261\212\064\351\211\254\333\233\116\341\331\344
\122\105\214\056\024\037\221\153\031\035\150\051\054\126\304\342
\036\023\127\144\360\141\343\271\021\337\260\341\127\240\033\255
\327\137\321\257\333\053\055\077\320\150\216\017\352\237\017\213
\065\130\033\023\034\364\336\065\241\012\135\326\352\337\022\157
\300\373\151\007\106\162\334\201\366\004\043\027\340\115\165\341
\162\157\260\050\353\233\341\341\203\241\237\112\135\257\314\233
\372\002\040\266\030\142\167\221\073\243\325\145\255\334\174\220
\167\034\104\101\244\112\213\353\225\162\351\366\011\144\334\250
\055\237\164\170\350\301\242\011\143\234\357\240\333\117\235\225
\253\040\117\267\260\367\207\134\246\240\344\067\070\307\134\343
\065\017\054\255\243\200\242\354\056\135\300\317\355\213\005\302
\346\163\156\366\211\325\365\322\106\216\352\155\143\033\036\212
\311\175\246\370\234\353\345\325\143\205\115\163\146\151\021\376
\310\016\364\301\307\146\111\123\176\344\031\153\361\351\172\131
\243\155\176\305\027\346\047\306\357\033\333\157\374\015\115\006
\001\264\016\134\060\106\125\140\257\070\145\072\312\107\272\254
\054\314\106\037\262\106\226\077\363\355\046\005\356\167\241\152
\153\176\055\155\130\134\112\324\216\147\270\361\332\325\106\212
\047\371\021\362\311\102\376\116\336\337\037\134\304\244\206\207
\026\063\241\247\027\030\245\015\344\005\345\053\302\053\013\242
\225\220\271\375\140\074\116\211\076\347\234\356\037\273\001\002
\003\001\000\001\243\102\060\100\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\340\115\277\334\233\101\135\023\350\144\360\247
\351\025\244\341\201\301\272\061\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\003\202\002\001\000\152\212\160\070
\131\266\332\213\030\310\276\052\323\266\031\325\146\051\172\135
\315\133\057\163\034\046\116\243\175\157\253\267\051\115\246\351
\245\021\203\247\071\163\257\020\104\222\346\045\135\117\141\372
\310\006\276\116\113\357\376\363\061\376\306\174\160\012\101\130
\332\350\231\113\226\311\170\274\230\174\002\051\355\011\200\346
\012\072\202\002\052\342\311\057\310\126\031\046\356\170\034\043
\375\367\223\145\116\347\363\230\230\257\315\335\331\236\100\210
\061\050\072\253\056\013\260\254\014\044\372\172\046\230\363\022
\141\020\364\135\027\367\176\342\170\227\124\342\214\350\051\272
\214\020\062\275\335\063\153\070\206\176\071\075\016\003\162\247
\135\171\217\105\212\131\256\133\041\156\061\106\325\131\215\317
\025\137\335\061\045\317\333\140\326\201\104\162\051\002\127\366
\226\324\326\377\352\051\333\071\305\270\054\212\032\215\316\313
\347\102\061\206\005\150\016\236\024\335\000\220\272\151\105\010
\333\156\220\201\206\247\052\005\077\346\204\071\370\267\371\127
\137\114\244\171\132\020\014\136\325\153\377\065\137\005\121\036
\154\243\165\251\317\120\203\323\174\364\146\367\202\215\075\014
\175\350\337\173\250\016\033\054\234\256\100\160\207\332\355\247
\026\202\132\276\065\154\040\116\042\141\331\274\121\172\315\172

```
\141\334\113\021\371\376\147\064\317\056\004\146\141\134\127\227
\043\214\363\206\033\110\337\052\257\247\301\377\330\216\076\003
\273\330\052\260\372\024\045\262\121\153\206\103\205\056\007\043
\026\200\215\114\373\264\143\073\314\303\164\355\033\243\036\376
\065\017\137\174\035\026\206\365\016\303\225\361\057\257\135\045
\073\121\346\327\166\101\070\321\113\003\071\050\245\036\221\162
\324\175\253\227\063\304\323\076\340\151\266\050\171\240\011\215
\034\321\377\101\162\110\006\374\232\056\347\040\371\233\242\336
\211\355\256\074\011\257\312\127\263\222\211\160\100\344\057\117
\302\160\203\100\327\044\054\153\347\011\037\323\325\307\301\010
\364\333\016\073\034\007\013\103\021\204\041\206\351\200\324\165
\330\253\361\002\142\301\261\176\125\141\317\023\327\046\260\327
\234\313\051\213\070\112\013\016\220\215\272\241
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "CA "

Issuer: CN=CA ,O=WoSign CA Limited,C=CN

Serial Number:50:70:6b:cd:d8:13:fc:1b:4e:3b:33:72:d2:11:48:8d

Subject: CN=CA ,O=WoSign CA Limited,C=CN

Not Valid Before: Sat Aug 08 01:00:01 2009

Not Valid After: Mon Aug 08 01:00:01 2039

Fingerprint (MD5): 78:83:5b:52:16:76:c4:24:3b:83:78:e8:ac:da:9a:93

Fingerprint (SHA1): 16:32:47:8d:89:f9:21:3a:92:00:85:63:f5:a4:a7:d3:12:40:8a:d6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CA "

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\026\062\107\215\211\371\041\072\222\000\205\143\365\244\247\323
\022\100\212\326
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\170\203\133\122\026\166\304\044\073\203\170\350\254\332\232\223
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\032\060\030\006\003\125\004\012\023\021\127\157\123\151\147\156
\040\103\101\040\114\151\155\151\164\145\144\061\033\060\031\006
\003\125\004\003\014\022\103\101\040\346\262\203\351\200\232\346
\240\271\350\257\201\344\271\246
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\120\160\153\315\330\023\374\033\116\073\063\162\322\021
\110\215
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SSC GDL
  CA Root B"
# Issuer: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:3e:8c:4f:bc:e4:29:83:82:4d:84:55:8e:d5:35:80:cf
# Subject: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Tue Jun 04 14:20:15 2013
# Not Valid After: Sat Jun 04 14:21:55 2033
# Fingerprint (MD5): ca:b5:ab:b2:55:7b:93:36:32:53:23:ed:79:27:30:4a
# Fingerprint (SHA1): c8:60:a3:18:fc:f5:b7:13:0b:10:07:ad:7f:61:4a:40:ff:ff:18:5f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root B"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_ID
  UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\020\076\214\117\274\344\051\203\202\115\204\125\216\325\065
\200\317
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\256\060\202\003\226\240\003\002\001\002\002\020\076
\214\117\274\344\051\203\202\115\204\125\216\325\065\200\317\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\161
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\031\060\027\006\003
\125\004\013\023\020\103\101\040\122\117\117\124\040\123\145\162
\166\151\143\145\163\061\032\060\030\006\003\125\004\003\023\021
\123\123\103\040\107\104\114\040\103\101\040\122\157\157\164\040
\102\060\036\027\015\061\063\060\066\060\064\061\064\062\060\061
\065\132\027\015\063\063\060\066\060\064\061\064\062\061\065\065
\132\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164
\155\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153
\141\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060
\027\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040
\123\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004
\003\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157
\157\164\040\102\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\217\225\351\322\353\301\163\045\307\070\147
\360\203\216\123\274\266\313\316\272\163\333\117\047\366\042\220
\077\102\277\041\326\336\142\202\264\157\004\005\111\011\073\167
\001\327\113\137\122\322\331\031\307\155\174\014\251\072\011\142
\344\052\030\151\214\240\335\353\254\023\266\016\071\021\200\151
\116\143\137\334\074\015\372\331\214\142\276\144\205\062\062\131
\227\120\223\211\337\373\377\324\330\145\161\307\106\125\242\033
\231\141\037\334\120\000\310\027\171\350\120\260\014\136\346\376
\166\246\001\116\011\310\160\154\372\220\263\136\334\075\007\315
\111\243\116\126\136\022\117\144\101\177\176\014\025\303\240\336
\263\243\051\006\111\104\241\137\157\077\201\240\104\115\360\173
\012\070\050\355\022\356\143\227\303\173\135\214\117\161\335\225
\072\332\056\250\001\106\012\363\154\350\265\361\037\010\000\361
\100\222\033\046\000\061\165\071\106\111\046\271\244\324\161\167
\021\244\117\063\314\011\333\331\321\041\113\222\104\254\316\170
\142\202\027\373\372\022\264\175\325\362\206\355\364\176\226\024
\346\215\003\122\257\315\027\242\325\034\245\376\201\246\232\355
\175\344\331\016\062\146\020\217\333\331\063\061\201\176\051\127
\357\314\262\241\140\356\212\133\271\145\333\177\033\232\054\217
\047\061\211\212\050\265\257\261\126\324\003\042\356\045\117\330
\232\275\322\154\127\274\203\246\110\037\054\125\007\011\064\053
\271\171\054\002\245\240\137\174\166\237\044\062\074\055\222\337
\353\110\127\207\241\366\376\043\372\064\253\211\365\150\033\216

\037\252\156\016\245\322\041\322\357\271\321\261\111\127\065\132
\204\323\036\342\002\155\122\020\177\342\214\115\041\333\062\062
\034\175\314\226\042\003\055\152\247\006\102\155\156\220\207\372
\034\134\260\117\320\003\101\023\372\013\123\346\301\020\002\110
\013\167\143\364\245\234\121\173\230\146\327\305\166\062\345\157
\135\024\141\175\014\273\155\225\100\332\251\046\307\367\251\313
\322\376\047\301\053\366\261\150\206\376\343\142\122\231\120\216
\053\336\101\041\007\033\207\365\100\035\160\255\317\375\302\103
\250\065\126\021\102\305\313\136\146\241\310\250\150\367\376\114
\127\141\066\122\201\002\003\001\000\001\243\102\060\100\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\035\006\003\125\035\016\004\026\004\024\162\003\106\207\141\366
\035\263\324\225\143\271\120\167\156\015\253\230\376\057\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002
\001\000\010\333\212\062\201\164\063\161\026\354\041\205\123\110
\012\157\037\162\343\343\004\370\056\267\077\363\044\225\117\234
\355\023\341\210\202\002\366\146\367\267\261\055\200\047\255\256
\270\155\376\043\007\021\010\253\164\141\214\050\022\371\366\020
\064\360\317\266\174\243\165\055\022\324\224\337\164\356\261\230
\253\261\356\042\142\113\131\037\177\376\032\145\255\115\342\244
\021\077\023\041\264\330\065\213\166\100\246\137\275\063\021\337
\230\343\041\136\035\243\273\170\066\002\073\330\375\144\204\332
\067\315\131\355\374\014\320\164\244\153\161\074\066\022\104\236
\176\156\117\012\041\034\145\037\113\022\154\277\216\162\326\335
\076\000\160\230\001\105\053\354\225\220\343\323\151\070\347\053
\235\176\145\131\133\341\333\205\312\143\376\253\277\344\320\375
\344\122\272\032\346\376\306\220\272\173\316\361\244\142\305\107
\276\044\307\240\172\345\041\341\306\010\340\014\211\203\217\200
\151\375\356\240\337\172\114\072\323\110\052\026\277\256\246\225
\265\335\150\037\373\016\265\005\214\321\262\104\174\140\060\126
\166\027\265\065\117\250\325\012\353\302\265\156\002\356\234\137
\016\243\261\001\250\345\123\157\176\203\101\037\025\330\377\341
\302\266\032\361\106\234\144\240\032\340\112\312\270\246\264\211
\044\356\173\225\231\142\324\342\100\273\316\243\232\175\035\162
\363\033\201\101\167\000\136\354\074\242\060\005\074\315\174\110
\066\023\310\062\260\153\157\237\070\050\070\151\134\173\346\342
\255\203\273\155\023\321\056\267\321\166\157\135\060\136\271\120
\105\110\326\110\200\223\121\311\026\251\020\135\147\306\313\176
\147\175\005\117\364\040\357\044\045\136\355\147\103\306\373\156
\171\373\262\362\310\311\316\101\174\005\340\255\213\315\012\105
\056\342\142\237\227\221\364\371\143\354\362\302\140\212\334\033
\377\041\250\377\043\207\214\163\215\260\072\314\037\217\061\162
\012\375\226\241\337\032\123\323\066\266\260\167\106\336\003\366
\302\200\056\157\227\043\341\021\314\121\230\077\356\100\377\364
\075\233\210\177\214\273\341\131\206\275\011\064\047\134\236\012
\223\062\073\125\052\251\136\013\015\017\251\246\121\004\342\233
\052\021

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "SSC
GDL CA Root B"
# Issuer: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:3e:8c:4f:bc:e4:29:83:82:4d:84:55:8e:d5:35:80:cf
# Subject: CN=SSC GDL CA Root B,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Tue Jun 04 14:20:15 2013
# Not Valid After: Sat Jun 04 14:21:55 2033
# Fingerprint (MD5): ca:b5:ab:b2:55:7b:93:36:32:53:23:ed:79:27:30:4a
# Fingerprint (SHA1): c8:60:a3:18:fc:f5:b7:13:0b:10:07:ad:7f:61:4a:40:ff:ff:18:5f
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root B"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\310\140\243\030\374\365\267\023\013\020\007\255\177\141\112\100
\377\377\030\137
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\312\265\253\262\125\173\223\066\062\123\043\355\171\047\060\112
END
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\102
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\076\214\117\274\344\051\203\202\115\204\125\216\325\065
\200\317
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```
# Microsoft Code Signing Only Certificate
# Certificate "SAPO Class 2 Root CA"
# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
# Serial Number:
1 (0x1)
# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
# Not Valid Before: Wed Sep 15 00:00:00 2010
# Not Valid After: Sat Sep 14 00:00:00 2030
# Fingerprint (MD5): 0a:7b:e7:df:15:44:93:ed:92:72:42:1a:28:4b:0c:ee
# Fingerprint (SHA1): e4:55:01:60:8a:a1:ef:89:e2:7b:8c:d3:c3:b3:4c:03:b0:38:e6:d7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SAPO Class 2 Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
```

\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\130\060\202\003\100\240\003\002\001\002\002\001\001
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\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162
\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007\023
\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061\052
\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040\101
\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146\151
\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003
\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164\040
\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003\023
\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122\157
\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206\367
\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100\164
\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172\141
\060\036\027\015\061\060\060\071\061\065\060\060\060\060\060
\132\027\015\063\060\060\071\061\064\060\060\060\060\060\132
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\267\174\151\174\140\365\154\046\364\252\034\027\177\135
\324\021\113\347\363\332\347\163\247\372\244\102\111\150\077\332
\245\100\134\006\150\137\116\314\275\276\201\070\044\055\314\046
\240\104\155\003\313\043\340\273\336\205\123\113\224\137\137\173
\252\310\032\227\376\327\043\223\355\260\152\275\330\374\000\076
\263\222\004\340\113\276\117\073\230\247\235\355\315\143\360\201
\347\154\230\324\154\140\125\000\345\271\074\346\064\225\135\340

\375\161\207\351\377\201\356\345\167\157\030\377\363\311\174\245
\225\335\202\334\024\331\242\341\276\315\047\163\273\105\133\077
\164\261\142\170\146\020\042\054\365\150\363\027\210\026\073\232
\033\035\373\024\256\015\272\362\220\125\242\325\060\326\053\225
\062\307\071\156\173\145\322\167\070\316\156\126\245\331\043\253
\070\262\073\121\205\300\035\033\267\021\057\005\151\107\330\002
\312\222\250\341\063\336\205\010\233\355\220\325\330\041\231\161
\277\266\365\163\357\147\010\230\144\322\362\052\172\113\041\026
\341\037\130\141\336\221\107\037\041\237\037\376\214\043\206\203
\030\047\002\003\001\000\001\243\077\060\075\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\253\235\043\223\375\037\063\112\062\055\252\044
\132\362\055\144\251\001\232\101\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\001\001\000\126\122\121\271
\017\002\341\366\056\234\261\061\132\246\370\316\274\356\002\204
\025\011\361\050\122\137\347\341\054\275\333\171\012\172\277\353
\142\236\325\206\107\051\356\164\060\354\114\165\265\036\343\252
\063\357\255\341\152\114\277\067\001\276\125\203\114\251\122\330
\067\230\120\157\150\335\107\101\267\054\060\310\156\114\007\054
\306\323\111\271\265\134\322\313\314\324\066\306\007\015\030\117
\077\143\000\304\354\266\210\373\001\144\143\255\321\367\167\174
\144\124\053\022\075\064\025\205\360\240\272\171\051\137\230\233
\102\352\256\301\250\237\023\211\212\155\351\270\070\311\141\355
\140\354\367\052\130\005\233\241\140\170\203\027\341\176\137\350
\375\170\340\153\126\052\206\166\256\133\302\136\353\105\344\060
\270\061\355\144\261\135\056\300\075\200\015\307\047\023\323\166
\342\206\373\334\333\200\012\201\341\375\010\371\013\304\061\264
\143\133\347\214\063\345\006\266\122\152\263\327\351\153\343\062
\170\062\146\224\116\335\215\167\155\323\044\050\133\124\141\167
\002\147\165\224\113\127\113\346\154\305\071\157

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SAPO Class 2 Root CA"

Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Serial Number: 1 (0x1)

Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 2 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Not Valid Before: Wed Sep 15 00:00:00 2010

Not Valid After: Sat Sep 14 00:00:00 2030

Fingerprint (MD5): 0a:7b:e7:df:15:44:93:ed:92:72:42:1a:28:4b:0c:ee

Fingerprint (SHA1): e4:55:01:60:8a:a1:ef:89:e2:7b:8c:d3:c3:b3:4c:03:b0:38:e6:d7

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
  UTF8 "SAPO Class 2 Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\344\125\001\140\212\241\357\211\342\173\214\323\303\263\114\003
\260\070\346\327
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\012\173\347\337\025\104\223\355\222\162\102\032\050\113\014\356
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CKA_ISSUER MULTILINE_OCTAL
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\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\062\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
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\141
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SAPO Class 3 Root CA"
# Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
# Serial Number: 2 (0x2)
# Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA
# Not Valid Before: Wed Sep 15 00:00:00 2010
# Not Valid After: Sat Sep 14 00:00:00 2030
# Fingerprint (MD5): 54:e5:eb:35:d1:75:05:3c:7c:df:30:d6:bf:f3:ff:53

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#

Fingerprint (SHA1): 38:dd:76:59:c7:35:10:0b:00:a2:37:e4:91:b7:bc:0f:fc:d2:31:6c

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SAPO Class 3 Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
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END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
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\141

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\002

END

CKA_VALUE MULTILINE_OCTAL

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\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162
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\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061\052
\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040\101
\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146\151
\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003
\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164\040
\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003\023
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\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100\164
\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172\141
\060\036\027\015\061\060\060\071\061\065\060\060\060\060\060
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\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
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\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
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\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
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\001\000\312\170\032\007\274\366\373\264\267\211\274\320\031\126
\070\052\131\235\007\352\032\371\370\370\150\147\136\217\357\312
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\274\063\361\236\241\157\013\216\012\044\364\370\115\220\246\262
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\020\013\377\273\040\033\223\046\031\014\103\077\351\216\274\061
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\176\310\213\234\252\243\101\067\014\020\221\250\246\205\134\271
\307\217\005\121\262\320\170\322\342\113\111\351\324\032\247\073
\254\252\063\346\232\052\003\100\230\157\164\122\023\061\224\321
\022\301\264\313\060\371\377\104\270\222\133\122\326\060\331\063

\321\165\343\031\245\026\025\267\124\127\361\126\120\316\116\276
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\340\263\334\256\357\270\375\250\263\354\354\345\071\210\104\264
\241\273\024\140\144\217\326\222\223\313\363\314\120\335\351\007
\310\147\147\371\360\207\204\221\262\000\142\351\277\112\025\164
\305\277\004\114\005\106\135\012\313\345\352\141\000\341\157\101
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\046\232\064\230\036\207\230\347\114\170\321\217\237\005\125\135
\212\113\311\317\240\013\175\006\220\234\030\222\262\304\262\327
\343\105\331\153\163\303\227\071\277\051\036\006\011\125\100\272
\274\332\110\165\103\355\376\104\176\075\054\346\142\221\003\375
\075\211\357\176\364\135\044\217\245\013\053\263\076\172\051\050
\274\273\077\277\353\167\205\004\046\213\224\262\220\365\353\215
\117\242\104\042\120\250\234\052\104\110\000\170\031\253\235\010
\226\025\002\003\001\000\001\243\077\060\075\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016
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\367\015\001\001\005\005\000\003\202\002\001\000\177\306\263\044
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\073\322\043\345\351\211\170\152\345\343\033\005\036\221\034\316
\006\227\215\146\026\007\104\357\201\271\010\176\243\307\071\064
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\156\313\274\267\260\057\031\161\215\216\257\012\115\130\061\213
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\045\070\006\043\253\116\261\016\334\073\061\012\255\332\113\000
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\144\231\215\013\230\220\263\176\146\073\013\330\253\350\165\016
\331\177\232\156\175\311\203\047\311\274\350\064\070\302\132\207
\062\162\007\014\376\325\224\321\360\300\170\362\200\250\106\365
\153\232\354\342\331\026\216\212\372\204\366\321\122\311\234\262
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\002\272\052\125\054\317\331\302\156\257\174\013\110\320\361\341
\247\302\255\164\217\206\344\355\252\372\134\203\175\102\350\175
\007\035\007\125\314\053\151\062\271\167\202\150\306\167\362\042
\151\246\311\012\135\207\231\345\161\236\175\057\023\036\322\364
\375\011\171\047\130\053\012\207\201\052\373\152\043\055\113\044
\205\164\026\107\030\017\011\305\376\251\110\044\343\254\320\151

```
\075\137\123\230\062\275\354\340\121\301\123\112\261\366\073\360
\064\110\365\232\336\334\321\340\343\275\045\263\104\350\072\163
\311\171\320\254\321\355\342\000\012\137\241\035\146\131\112\163
\150\324\005\162\063\070\247\153\257\221\333\015\307\214\100\350
\236\220\210\311\373\376\044\327\201\254\363\336
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust

for "SAPO Class 3 Root CA"

Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Serial Number: 2 (0x2)

Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 3 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Not Valid Before: Wed Sep 15 00:00:00 2010

Not Valid After: Sat Sep 14 00:00:00 2030

Fingerprint (MD5): 54:e5:eb:35:d1:75:05:3c:7c:df:30:d6:bf:f3:ff:53

Fingerprint (SHA1): 38:dd:76:59:c7:35:10:0b:00:a2:37:e4:91:b7:bc:0f:fc:d2:31:6c

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SAPO Class 3 Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\070\335\166\131\307\065\020\013\000\242\067\344\221\267\274\017
\374\322\061\154
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\124\345\353\065\321\165\005\074\174\337\060\326\277\363\377\123
END
```

CKA_ISSUER

MULTILINE_OCTAL

```
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\063\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
```

```
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\001\002
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST

CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "SAPO Class 4 Root CA"

Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Serial Number: 3 (0x3)

Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Not Valid Before: Wed Sep 15 00:00:00 2010

Not Valid After: Sat Sep 14 00:00:00 2030

Fingerprint (MD5): f8:a7:f6:89:94:8c:61:f7:43:98:36:df:22:82:9b:3b

Fingerprint (SHA1): 20:a8:f5:ff:c4:3a:f4:a9:bc:89:88:1e:bf:99:20:ff:91:e9:fd:0a

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SAPO Class 4 Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\003

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\130\060\202\004\100\240\003\002\001\002\002\001\003
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162
\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007\023
\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061\052
\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040\101
\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146\151
\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006\003
\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164\040
\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003\023
\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122\157
\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206\367
\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100\164
\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172\141
\060\036\027\015\061\060\060\071\061\065\060\060\060\060\060
\132\027\015\063\060\060\071\061\064\060\060\060\060\060\060\132
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122

\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\333\334\355\110\232\240\243\237\340\021\216\331\310\222
\165\072\125\301\121\042\312\013\172\244\065\015\305\346\127\055
\203\360\052\157\042\070\067\061\155\174\205\044\242\006\057\103
\202\075\105\060\100\045\034\356\130\107\101\346\360\236\000\036
\370\364\057\021\273\222\262\230\105\055\323\037\200\311\166\024
\023\303\314\100\346\255\353\071\140\374\317\310\337\052\375\214
\022\121\357\317\014\144\306\127\350\043\121\135\347\146\122\352
\146\275\223\177\235\172\050\361\031\160\156\204\237\060\107\267
\260\071\153\023\054\353\113\115\056\257\077\277\375\002\023\112
\071\347\076\063\305\020\221\121\276\017\107\235\115\122\374\054
\363\343\023\242\000\202\341\024\014\315\322\236\263\362\340\201
\332\276\231\222\123\343\175\231\167\103\341\341\110\051\201\236
\326\005\127\072\161\334\076\230\255\130\160\157\106\273\176\062
\003\342\203\233\131\127\367\370\263\315\124\026\354\266\255\241
\034\032\222\321\324\051\236\217\315\263\350\175\120\361\302\202
\254\272\275\264\165\126\240\365\105\135\030\175\054\214\361\173
\101\314\206\261\232\204\113\012\052\135\233\226\341\315\372\253
\026\047\101\347\225\065\246\313\212\247\226\363\245\314\121\371
\055\175\036\103\373\334\155\265\271\070\275\005\373\130\372\056
\323\354\136\144\055\257\130\001\112\174\042\106\323\101\313\075
\344\226\136\111\103\070\273\211\353\364\234\151\071\022\003\134
\204\273\345\214\036\352\340\146\273\300\277\214\376\236\012\115
\075\150\077\100\166\326\062\251\352\105\270\152\007\122\216\315
\121\361\135\050\143\014\323\131\070\374\311\375\202\311\105\040
\274\346\350\314\242\014\313\173\144\071\111\106\105\365\163\034
\152\227\040\353\041\102\367\264\040\122\267\112\375\165\274\313
\017\014\147\021\127\037\367\060\361\253\220\314\135\074\226\005
\142\323\312\125\001\113\106\305\200\207\034\162\320\163\124\041
\352\327\243\234\323\256\177\324\123\331\050\374\127\336\345\077
\122\112\273\310\046\044\107\123\034\163\272\317\306\264\060\315
\136\161\307\126\274\111\070\045\346\305\020\011\170\331\324\035
\134\315\156\355\333\221\134\241\123\024\126\252\215\047\251\246
\216\033\002\003\001\000\001\243\077\060\075\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\014\006\003\125
\035\023\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\026\204\055\373\033\347\264\036\150\230\323\102
\040\032\156\176\117\221\127\002\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\002\001\000\173\343\015\143
\072\144\040\155\314\374\054\270\351\326\253\333\327\253\046\051
\107\242\014\126\355\165\314\225\231\122\066\313\040\373\021\064
\027\102\116\165\005\260\330\344\270\260\204\057\230\031\271\373
\320\071\154\162\006\030\311\134\212\172\164\010\067\110\151\375
\042\241\135\305\327\170\023\360\050\102\101\303\311\303\071\011

\007\324\241\370\067\042\151\344\337\062\125\157\302\174\271\223
\361\262\067\165\314\256\322\063\226\214\066\367\001\355\343\144
\351\013\150\133\020\252\001\066\231\174\317\232\224\135\375\032
\131\141\242\145\025\175\236\027\144\324\237\123\230\001\375\161
\127\320\135\100\021\026\077\077\104\322\257\311\374\010\062\175
\166\370\325\103\350\334\066\150\007\303\116\303\226\227\127\306
\175\066\136\333\160\255\376\256\324\210\235\265\244\140\326\243
\142\276\174\371\064\036\374\273\364\112\162\305\203\036\106\150
\303\016\227\203\030\075\323\016\012\021\065\174\151\225\305\253
\052\365\310\071\020\115\014\211\060\051\211\111\033\104\227\221
\364\352\145\041\033\077\012\103\162\202\034\155\021\135\340\042
\105\137\141\114\242\246\372\337\243\106\272\341\201\140\154\062
\264\374\344\334\066\005\344\063\367\353\217\167\111\252\215\012
\357\110\212\346\101\227\176\073\253\103\207\362\010\140\013\157
\327\131\146\375\053\273\057\316\063\117\162\340\266\327\263\123
\127\211\360\073\274\156\342\020\277\163\076\142\217\245\010\351
\123\147\301\116\301\056\102\103\247\262\244\371\026\213\102\356
\334\064\177\110\263\220\333\044\342\310\344\123\065\123\234\352
\067\205\317\277\230\006\065\107\046\327\256\155\335\204\251\143
\130\046\101\365\165\062\056\141\236\117\223\122\122\366\132\043
\353\301\240\163\046\045\042\102\221\221\221\200\117\377\210\316
\136\163\347\226\302\355\011\022\367\166\226\251\171\142\220\111
\201\203\237\014\062\062\342\133\312\335\110\064\254\207\216\161
\225\256\114\344\174\170\035\247\121\303\275\021\372\002\321\225
\211\163\010\106\042\211\151\000\317\117\200\301\115\133\224\304
\312\231\121\230\057\015\275\175\124\144\324\012\332\047\131\247
\067\273\126\014\320\006\242\162\271\022\271\133

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SAPO Class 4 Root CA"

Issuer: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Serial Number: 3

(0x3)

Subject: 1.2.840.113549.1.9.1=pkiadmin@trustcentre.co.za,CN=SAPO Class 4 Root CA,OU=SAPO Trust
Centre,O=South African Post Office Limited,L=Somerset West,ST=Western Cape,C=ZA

Not Valid Before: Wed Sep 15 00:00:00 2010

Not Valid After: Sat Sep 14 00:00:00 2030

Fingerprint (MD5): f8:a7:f6:89:94:8c:61:f7:43:98:36:df:22:82:9b:3b

Fingerprint (SHA1): 20:a8:f5:ff:c4:3a:f4:a9:bc:89:88:1e:bf:99:20:ff:91:e9:fd:0a

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```

CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SAPO Class 4 Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\040\250\365\377\304\072\364\251\274\211\210\036\277\231\040\377
\221\351\375\012
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\370\247\366\211\224\214\141\367\103\230\066\337\042\202\233\073
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\026\060\024\006\003\125\004\007
\023\015\123\157\155\145\162\163\145\164\040\127\145\163\164\061
\052\060\050\006\003\125\004\012\023\041\123\157\165\164\150\040
\101\146\162\151\143\141\156\040\120\157\163\164\040\117\146\146
\151\143\145\040\114\151\155\151\164\145\144\061\032\060\030\006
\003\125\004\013\023\021\123\101\120\117\040\124\162\165\163\164
\040\103\145\156\164\162\145\061\035\060\033\006\003\125\004\003
\023\024\123\101\120\117\040\103\154\141\163\163\040\064\040\122
\157\157\164\040\103\101\061\051\060\047\006\011\052\206\110\206
\367\015\001\011\001\026\032\160\153\151\141\144\155\151\156\100
\164\162\165\163\164\143\145\156\164\162\145\056\143\157\056\172
\141
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\003
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only
Certificate
# Certificate "CA Disig Root R1"
# Issuer: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK
# Serial Number:c3:03:9a:ee:50:90:6e:28
# Subject: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK
# Not Valid Before: Thu Jul 19 09:06:56 2012
# Not Valid After: Sat Jul 19 09:06:56 2042
# Fingerprint (MD5): be:ec:11:93:9a:f5:69:21:bc:d7:c1:c0:67:89:cc:2a
# Fingerprint (SHA1): 8e:1c:74:f8:a6:20:b9:e5:8a:f4:61:fa:ec:2b:47:56:51:1a:52:c6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "CA Disig Root R1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "CA Disig Root R1"

Issuer: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK

Serial Number:c3:03:9a:ee:50:90:6e:28

Subject: CN=CA Disig Root R1,O=Disig a.s.,L=Bratislava,C=SK

Not Valid Before: Thu Jul 19 09:06:56 2012

Not Valid After: Sat Jul 19 09:06:56 2042

Fingerprint (MD5): be:ec:11:93:9a:f5:69:21:bc:d7:c1:c0:67:89:cc:2a

Fingerprint (SHA1): 8e:1c:74:f8:a6:20:b9:e5:8a:f4:61:fa:ec:2b:47:56:51:1a:52:c6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CA Disig Root R1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\121\032\122\306
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END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

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END

CKA_ISSUER MULTILINE_OCTAL

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END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

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END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Autoridad Certificadora Raíz Nacional de Uruguay"

Issuer: C=UY,O=AGESIC,CN=Autoridad

Certificadora Raíz Nacional de Uruguay

Serial Number:02:ee:00:9b:66:d8:6a:1d:67:fe:da:8a:25:6f:21:5a:75:1b

Subject: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay

Not Valid Before: Thu Nov 03 15:02:49 2011

Not Valid After: Wed Oct 29 15:02:49 2031

Fingerprint (MD5): 7b:b7:e7:2e:64:18:e4:11:0c:f7:42:78:3e:65:a2:ae

Fingerprint (SHA1): 7a:1c:dd:e3:d2:19:7e:71:37:43:3d:3f:99:c0:b3:69:f7:06:c7:49

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridad Certificadora Raíz Nacional de Uruguay"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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CKA_SERIAL_NUMBER MULTILINE_OCTAL

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END

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\137\327\107\303\052\105\123\025\126\166\117\273\011\350\204\140
\021\357\163\325\347\120\156\151\050\375\353\306\313\312\116\023
\143\015\016\067\054\061\037\333\247\130\240\262\375\015\027\207
\263\222\256\033\050\200\037\266\222\176\206\021\341\366\114\230
\177\146\213\037\023\111\003\102\374\373\230\234\356\206\226\251
\056\005\176\160\034\301\167\310\351\135\202\270\016\316\133\144
\005\143\356\077\006\055\066\014\351\037\162\133\036\254\335\046
\365\034\070\156\375\214\075\115\206\353\047\313\312\003\215\100

```
\363\052\321\212\330\064\016\302\255\265\210\355\207\232\212\205
\242\207\357\351\271\070\347\150\226\243\001\317\202\075\034\113
\050\235\047\365\371\231\226\173\110\375\254\320\360\062\367\070
\004\335\115\231\256\016\222\202\303\372\074\033\023\307\150\267
\135\340\223\106\270\270\270\244\014\304\033\306\272\106\226\335
\236\125\017\107\235\366\201\245\254\145\131\330\335\256\006\154
\340\103\202\306\147\330\160\002\065\365\066\004\343\112\071\251
\165\002\036\346\077\106\317\234\054\036\204\210\027\252\046\251
\246\103\200\340\300\133\243\144\203\233\232\355\153\001\145\266
\301\075\030\354\223\031\146\224\250\323\021\120\231\172\210\175
\257\076\177\224\220\073\012\303\152\267\215\137\322\247\121\321
\062\037\271\362\062\175\167\223\155\103\354\101\151\253\317\311
\141
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Autoridad Certificadora Raíz Nacional de Uruguay"

Issuer: C=UY,O=AGESIC,CN=Autoridad Certificadora Raíz Nacional de Uruguay

Serial Number:02:ee:00:9b:66:d8:6a:1d:67:fe:da:8a:25:6f:21:5a:75:1b

Subject: C=UY,O=AGESIC,CN=Autoridad Certificadora

Raíz Nacional de Uruguay

Not Valid Before: Thu Nov 03 15:02:49 2011

Not Valid After: Wed Oct 29 15:02:49 2031

Fingerprint (MD5): 7b:b7:e7:2e:64:18:e4:11:0c:f7:42:78:3e:65:a2:ae

Fingerprint (SHA1): 7a:1c:dd:e3:d2:19:7e:71:37:43:3d:3f:99:c0:b3:69:f7:06:c7:49

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridad Certificadora Raíz Nacional de Uruguay"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\172\034\335\343\322\031\176\161\067\103\075\077\231\300\263\151
```

```
\367\006\307\111
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\173\267\347\056\144\030\344\021\014\367\102\170\076\145\242\256
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\132\061\072\060\070\006\003\125\004\003\014\061\101\165\164
```

```
\157\162\151\144\141\144\040\103\145\162\164\151\146\151\143\141
```

```
\144\157\162\141\040\122\141\303\255\172\040\116\141\143\151\157
```

```
\156\141\154\040\144\145\040\125\162\165\147\165\141\171\061\017
```

```
\060\015\006\003\125\004\012\023\006\101\107\105\123\111\103\061
```

```
\013\060\011\006\003\125\004\006\023\002\125\131
```

```

END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\022\002\356\000\233\146\330\152\035\147\376\332\212\045\157
\041\132\165\033
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ApplicationCA2 Root"
# Issuer: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP
# Serial Number:31:32:35:33:37:32:38:32:38:32:38
# Subject: CN=ApplicationCA2 Root,OU=GPKI,O=Japanese Government,C=JP
# Not Valid Before: Tue Mar 12 15:00:00 2013
# Not Valid After: Sat Mar 12 15:00:00 2033
# Fingerprint (MD5): 7b:4c:15:74:3b:54:96:07:aa:95:3b:60:10:23:cf:f3
# Fingerprint (SHA1): f0:0f:c3:7d:6a:1c:92:61:fb:6b:c1:c2:18:49:8c:5a:a4:dc:51:fb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ApplicationCA2 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151
\157\156\103\101\062\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151
\157\156\103\101\062\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\061\062\065\063\067\062\070\062\070\062\070
END
CKA_VALUE

```

MULTILINE_OCTAL

\060\202\003\367\060\202\002\337\240\003\002\001\002\002\013\061
\062\065\063\067\062\070\062\070\062\070\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\060\130\061\013\060\011\006
\003\125\004\006\023\002\112\120\061\034\060\032\006\003\125\004
\012\023\023\112\141\160\141\156\145\163\145\040\107\157\166\145
\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013\023
\004\107\120\113\111\061\034\060\032\006\003\125\004\003\023\023
\101\160\160\154\151\143\141\164\151\157\156\103\101\062\040\122
\157\157\164\060\036\027\015\061\063\060\063\061\062\061\065\060\060
\060\060\060\132\027\015\063\063\060\063\061\062\061\065\060\060
\060\060\132\060\130\061\013\060\011\006\003\125\004\006\023\002
\112\120\061\034\060\032\006\003\125\004\012\023\023\112\141\160
\141\156\145\163\145\040\107\157\166\145\162\156\155\145\156\164
\061\015\060\013\006\003\125\004\013\023\004\107\120\113\111\061
\034\060\032\006\003\125\004\003\023\023\101\160\160\154\151\143
\141\164\151\157\156\103\101\062\040\122\157\157\164\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\246\252
\255\045\145\326\000\021\326\350\172\166\252\364\346\264\113\363
\314\303\122\264\215\254\246\117\265\222\161\157\106\265\325\255
\213\022\042\027\045\316\105\350\024\172\205\232\344\043\020\250
\372\261\147\120\345\155\107\340\152\211\023\343\256\256\065\361
\364\102\305\005\367\115\227\176\074\050\374\260\046\221\036\214
\036\070\032\226\334\130\104\227\142\343\062\310\321\025\101\115
\165\230\170\276\253\150\251\136\355\107\276\244\272\216\241\002
\227\336\223\164\231\155\147\264\005\045\356\224\310\355\252\244
\272\062\154\102\021\353\276\313\027\006\220\341\223\205\310\144
\050\316\037\107\307\300\135\140\356\166\066\334\063\073\121\353
\173\317\162\330\017\170\250\031\202\010\220\076\032\230\215\216
\264\317\025\066\246\156\335\267\342\115\100\040\123\331\166\052
\320\170\254\211\360\117\213\062\155\104\352\056\272\260\251\353
\211\335\267\157\171\017\253\201\156\270\346\213\051\013\131\257
\266\111\015\121\054\251\375\235\050\143\146\270\160\225\163\232
\330\372\073\063\274\102\102\033\062\254\261\062\373\075\002\003
\001\000\001\243\201\301\060\201\276\060\035\006\003\125\035\016
\004\026\004\024\126\247\254\252\002\035\262\254\075\220\016\240
\157\056\101\306\166\347\173\332\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\174\006\003\125\035\021\004
\165\060\163\244\161\060\157\061\013\060\011\006\003\125\004\006
\023\002\112\120\061\030\060\026\006\003\125\004\012\014\017\346
\227\245\346\234\254\345\233\275\346\224\277\345\272\234\061\033
\060\031\006\003\125\004\013\014\022\346\224\277\345\272\234\350
\252\215\350\250\274\345\237\272\347\233\244\061\051\060\047\006
\003\125\004\003\014\040\343\202\242\343\203\227\343\203\252\343
\202\261\343\203\274\343\202\267\343\203\247\343\203\263\103\101
\062\040\122\157\157\164\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367


```
\015\001\001\013\005\000\003\202\001\001\000\177\232\011\165\254
\007\321\162\164\056\167\127\060\302\004\234\324\200\246\203\347
\245\240\033\237\376\253\363\200\275\325\112\243\241\217\266\114
\140\021\347\312\341\140\201\327\110\301\040\131\245\141\062\213
\235\236\227\323\146\203\332\145\056\130\076\333\345\057\245\315
\214\163\246\121\276\130\050\240\171\134\151\057\103\337\143\262
\211\107\312\273\336\271\064\021\143\240\016\045\027\345\207\364
\035\260\260\245\317\101\250\164\306\350\123\325\102\364\202\055
\123\011\021\150\046\161\224\165\023\115\252\166\210\074\164\261
\326\343\114\117\142\303\111\114\116\155\361\160\176\303\177\246
\005\314\170\233\351\201\333\250\310\307\134\236\374\222\222\055
\246\227\362\070\265\156\163\225\014\300\077\316\246\224\060\265
\372\005\267\336\236\040\252\374\023\144\311\212\272\144\357\342
\143\344\330\230\256\153\265\076\246\125\270\063\076\054\162\373
\054\021\000\373\133\026\057\204\322\023\236\372\005\305\301\313
\162\116\042\335\204\312\113\274\322\055\206\032\004\166\131\037
\111\102\142\073\023\037\026\350\272\327\375
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ApplicationCA2 Root"

Issuer: CN=ApplicationCA2 Root,OU=GPKE,O=Japanese Government,C=JP

Serial Number:31:32:35:33:37:32:38:32:38:32:38

Subject: CN=ApplicationCA2 Root,OU=GPKE,O=Japanese Government,C=JP

Not Valid Before: Tue Mar 12 15:00:00 2013

Not Valid After: Sat Mar 12 15:00:00 2033

Fingerprint (MD5): 7b:4c:15:74:3b:54:96:07:aa:95:3b:60:10:23:cf:f3

Fingerprint (SHA1): f0:0f:c3:7d:6a:1c:92:61:fb:6b:c1:c2:18:49:8c:5a:a4:dc:51:fb

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL

UTF8 "ApplicationCA2 Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\360\017\303\175\152\034\222\141\373\153\301\302\030\111\214\132
\244\334\121\373
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\173\114\025\164\073\124\226\007\252\225\073\140\020\043\317\363
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
```

```
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\015\060
\013\006\003\125\004\013\023\004\107\120\113\111\061\034\060\032
\006\003\125\004\003\023\023\101\160\160\154\151\143\141\164\151
\157\156\103\101\062\040\122\157\157\164
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\013\061\062\065\063\067\062\070\062\070\062\070
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing

Only Certificate

Certificate "ADOCA02"

Issuer: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

Serial Number: 1813 (0x715)

Subject: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

Not Valid Before: Thu Sep 01 04:26:07 2011

Not Valid After: Sun Jan 27 02:31:24 2019

Fingerprint (MD5): c4:4f:6a:cd:50:fd:44:c4:36:e0:b3:38:d3:7c:c0:97

Fingerprint (SHA1): 84:42:9d:9f:e2:e7:3a:0d:c8:aa:0a:e0:a9:02:f2:74:99:33:fe:02

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ADOCA02"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003
\023\007\101\104\117\103\101\060\062
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003
\023\007\101\104\117\103\101\060\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\002\007\025

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\331\060\202\002\301\240\003\002\001\002\002\002\007
\025\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003
\023\007\101\104\117\103\101\060\062\060\036\027\015\061\061\060
\071\060\061\060\064\062\066\060\067\132\027\015\061\071\060\061
\062\067\060\062\063\061\062\064\132\060\127\061\013\060\011\006
\003\125\004\006\023\002\101\125\061\014\060\012\006\003\125\004
\012\023\003\107\117\126\061\014\060\012\006\003\125\004\013\023
\003\104\157\104\061\014\060\012\006\003\125\004\013\023\003\120
\113\111\061\014\060\012\006\003\125\004\013\023\003\103\101\163
\061\020\060\016\006\003\125\004\003\023\007\101\104\117\103\101
\060\062\060\202\001\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\344\120\205\110\167\217\276\377\111\321\273\165\256
\207\040\012\226\101\045\053\274\106\007\335\313\004\206\225\054
\111\056\275\106\014\016\367\130\240\140\026\205\332\135\073\343
\165\136\102\175\144\154\217\301\135\051\144\101\262\205\267\033
\106\275\205\332\327\072\035\262\264\361\112\075\376\036\332\310
\356\206\235\243\152\121\013\344\105\230\257\330\033\110\274\074
\024\042\355\053\237\073\177\157\063\074\326\175\254\340\171\117
\277\145\223\313\027\052\157\274\172\017\351\133\137\341\014\052
\373\100\122\066\112\135\145\070\313\131\301\110\263\244\221\205
\026\135\170\175\302\317\055\063\356\131\112\310\346\141\263\206
\037\204\310\270\032\154\236\321\140\264\202\065\353\275\043\250
\057\223\124\120\316\044\136\061\256\323\152\064\054\141\207\067
\106\036\103\211\306\200\313\042\003\323\311\205\056\037\233\261
\254\071\113\115\140\362\212\141\033\377\203\261\054\163\217\210
\102\300\055\261\312\236\300\225\147\164\173\226\344\152\172\216
\101\105\240\064\363\316\270\347\342\217\363\120\125\144\157\271
\040\053\223\002\003\001\000\001\243\201\256\060\201\253\060\014
\006\003\125\035\023\004\005\060\003\001\001\377\060\113\006\003
\125\035\040\004\104\060\102\060\070\006\011\052\044\001\202\116
\001\001\001\001\060\053\060\051\006\010\053\006\001\005\005\007
\002\001\026\035\150\164\164\160\072\057\057\167\167\167\056\144
\145\146\145\156\143\145\056\147\157\166\056\141\165\057\160\153
\151\060\006\006\004\125\035\040\000\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\306\060\037\006\003\125\035\043
\004\030\060\026\200\024\351\347\235\353\065\275\270\262\053\111
\130\364\274\222\175\213\161\212\021\132\060\035\006\003\125\035
\016\004\026\004\024\351\347\235\353\065\275\270\262\053\111\130
\364\274\222\175\213\161\212\021\132\060\015\006\011\052\206\110

```
\206\367\015\001\001\005\005\000\003\202\001\001\000\126\320\250
\310\154\311\264\254\361\073\201\165\053\021\304\366\126\264\127
\256\302\222\031\134\226\163\012\355\056\103\234\144\052\131\170
\023\265\120\214\116\152\220\124\363\031\076\026\030\317\103\023
\311\062\163\370\125\340\312\320\222\031\076\145\243\336\200\022
\034\121\245\030\054\300\151\335\267\206\062\257\360\255\317\340
\303\043\304\345\374\266\077\013\005\327\226\072\144\136\167\214
\204\316\361\334\315\004\012\334\227\361\041\034\307\175\060\045
\135\327\040\065\225\303\207\035\266\077\333\123\342\052\244\370
\031\027\072\014\025\356\263\005\070\061\356\105\161\335\227\373
\170\161\206\002\364\237\064\031\163\111\020\053\240\177\361\311
\372\240\362\130\043\061\026\370\020\120\202\273\135\322\352\357
\151\335\147\166\125\070\307\250\016\003\200\070\117\000\040\153
\337\053\145\223\333\010\257\140\154\064\040\250\255\110\077\020
\176\246\303\224\001\225\341\201\054\240\355\214\256\124\116\072
\113\303\322\302\317\176\002\174\357\052\054\273\354\332\336\305
\001\257\224\111\355\017\302\277\016\220\151\055\153
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ADOCA02"

Issuer: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

Serial Number: 1813 (0x715)

Subject: CN=ADOCA02,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

Not Valid Before: Thu Sep 01 04:26:07 2011

Not Valid After: Sun Jan 27 02:31:24 2019

Fingerprint (MD5): c4:4f:6a:cd:50:fd:44:c4:36:e0:b3:38:d3:7c:c0:97

#

Fingerprint (SHA1): 84:42:9d:9f:e2:e7:3a:0d:c8:aa:0a:e0:a9:02:f2:74:99:33:fe:02

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ADOCA02"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\204\102\235\237\342\347\072\015\310\252\012\340\251\002\362\164
\231\063\376\002
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\304\117\152\315\120\375\104\304\066\340\263\070\323\174\300\227
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\127\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
```

```
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\020\060\016\006\003\125\004\003
\023\007\101\104\117\103\101\060\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\002\007\025
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "StartCom Certification Authority G2"

Issuer: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL

Serial Number: 59 (0x3b)

Subject: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL

Not Valid Before: Fri Jan 01 01:00:01 2010

Not Valid After: Sat Dec 31 23:59:01 2039

Fingerprint (MD5): 78:4b:fb:9e:64:82:0a:d3:b8:4c:62:f3:64:f2:90:64

Fingerprint (SHA1): 31:f1:fd:68:22:63:20:ee:c6:3b:3f:9d:ea:4a:3e:53:7c:7c:39:17

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "StartCom Certification Authority G2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003
\023\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\107\062
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003
\023\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\107\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\073

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\143\060\202\003\113\240\003\002\001\002\002\001\073
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061\026
\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103\157
\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003\023
\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\107\062\060\036\027\015\061\060\060\061\060\061\060\061
\060\060\060\061\132\027\015\063\071\061\062\063\061\062\063\065
\071\060\061\132\060\123\061\013\060\011\006\003\125\004\006\023
\002\111\114\061\026\060\024\006\003\125\004\012\023\015\123\164
\141\162\164\103\157\155\040\114\164\144\056\061\054\060\052\006
\003\125\004\003\023\043\123\164\141\162\164\103\157\155\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\107\062\060\202\002\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017
\000\060\202\002\012\002\202\002\001\000\266\211\066\133\007\267
\040\066\275\202\273\341\026\040\003\225\172\257\016\243\125\311
\045\231\112\305\320\126\101\207\220\115\041\140\244\024\207\073
\315\375\262\076\264\147\003\152\355\341\017\113\300\221\205\160
\105\340\102\236\336\051\043\324\001\015\240\020\171\270\333\003
\275\363\251\057\321\306\340\017\313\236\212\024\012\270\275\366
\126\142\361\305\162\266\062\045\331\262\363\275\145\305\015\054
\156\325\222\157\030\213\000\101\024\202\157\100\040\046\172\050
\017\365\036\177\047\367\224\261\067\075\267\307\221\367\342\001
\354\375\224\211\341\314\156\323\066\326\012\031\171\256\327\064
\202\145\377\174\102\273\266\335\013\246\064\257\113\140\376\177
\103\111\006\213\214\103\270\126\362\331\177\041\103\027\352\247
\110\225\001\165\165\352\053\245\103\225\352\025\204\235\010\215
\046\156\125\233\253\334\322\071\322\061\035\140\342\254\314\126
\105\044\365\034\124\253\356\206\335\226\062\205\370\114\117\350
\225\166\266\005\335\066\043\147\274\377\025\342\312\073\346\246
\354\073\354\046\021\064\110\215\366\200\053\032\043\002\353\212
\034\072\166\052\173\126\026\034\162\052\263\252\343\140\245\000
\237\004\233\342\157\036\024\130\133\245\154\213\130\074\303\272
\116\072\134\367\341\226\053\076\357\007\274\244\345\135\314\115
\237\015\341\334\252\273\341\156\032\354\217\341\266\114\115\171
\162\135\027\065\013\035\327\301\107\332\226\044\340\320\162\250
\132\137\146\055\020\334\057\052\023\256\046\376\012\034\031\314
\320\076\013\234\310\011\056\371\133\226\172\107\234\351\172\363
\005\120\164\225\163\236\060\011\363\227\202\136\346\217\071\010
\036\131\345\065\024\102\023\377\000\234\367\276\252\120\317\342
\121\110\327\270\157\257\370\116\176\063\230\222\024\142\072\165
\143\317\173\372\336\202\073\251\273\071\342\304\275\054\000\016
\310\027\254\023\357\115\045\216\330\263\220\057\251\332\051\175

\035\257\164\072\262\047\300\301\036\076\165\243\026\251\257\172
\042\135\237\023\032\317\247\240\353\343\206\012\323\375\346\226
\225\327\043\310\067\335\304\174\252\066\254\230\032\022\261\340
\116\350\261\073\365\326\157\361\060\327\002\003\001\000\001\243
\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\113
\305\264\100\153\255\034\263\245\034\145\156\106\066\211\207\005
\014\016\266\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\002\001\000\163\127\077\054\325\225\062\176\067
\333\226\222\353\031\136\176\123\347\101\354\021\266\107\357\265
\336\355\164\134\305\361\216\111\340\374\156\231\023\315\237\212
\332\315\072\012\330\072\132\011\077\137\064\320\057\003\322\146
\035\032\275\234\220\067\310\014\216\007\132\224\105\106\052\346
\276\172\332\241\251\244\151\022\222\260\175\066\324\104\207\327
\121\361\051\143\326\165\315\026\344\047\211\035\370\302\062\110
\375\333\231\320\217\137\124\164\314\254\147\064\021\142\331\014
\012\067\207\321\243\027\110\216\322\027\035\366\327\375\333\145
\353\375\250\324\365\326\117\244\133\165\350\305\322\140\262\333
\011\176\045\213\173\272\122\222\236\076\350\305\167\241\074\340
\112\163\153\141\317\206\334\103\377\377\041\376\043\135\044\112
\365\323\155\017\142\004\005\127\202\332\156\244\063\045\171\113
\056\124\031\213\314\054\075\060\351\321\006\377\350\062\106\276
\265\063\166\167\250\001\135\226\301\301\325\276\256\045\300\311
\036\012\011\040\210\241\016\311\363\157\115\202\124\000\040\247
\322\217\344\071\124\027\056\215\036\270\033\273\033\275\232\116
\073\020\064\334\234\210\123\357\242\061\133\130\117\221\142\310
\302\232\232\315\025\135\070\251\326\276\370\023\265\237\022\151
\362\120\142\254\373\027\067\364\356\270\165\147\140\020\373\203
\120\371\104\265\165\234\100\027\262\376\375\171\135\156\130\130
\137\060\374\000\256\257\063\301\016\116\154\272\247\246\241\177
\062\333\070\340\261\162\027\012\053\221\354\152\143\046\355\211
\324\170\314\164\036\005\370\153\376\214\152\166\071\051\256\145
\043\022\225\010\042\034\227\316\133\006\356\014\342\273\274\037
\104\223\366\330\070\105\005\041\355\344\255\253\022\266\003\244
\102\056\055\304\011\072\003\147\151\204\232\341\131\220\212\050
\205\325\135\164\261\321\016\040\130\233\023\245\260\143\246\355
\173\107\375\105\125\060\244\356\232\324\346\342\207\357\230\311
\062\202\021\051\042\274\000\012\061\136\055\017\300\216\351\153
\262\217\056\006\330\321\221\307\306\022\364\114\375\060\027\303
\301\332\070\133\343\251\352\346\241\272\171\357\163\330\266\123
\127\055\366\320\341\327\110

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "StartCom Certification Authority G2"
# Issuer: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL
# Serial Number: 59 (0x3b)
# Subject: CN=StartCom Certification Authority G2,O=StartCom Ltd.,C=IL
# Not Valid Before: Fri Jan 01 01:00:01 2010
# Not Valid After: Sat Dec 31 23:59:01 2039
# Fingerprint (MD5): 78:4b:fb:9e:64:82:0a:d3:b8:4c:62:f3:64:f2:90:64
# Fingerprint (SHA1): 31:f1:fd:68:22:63:20:ee:c6:3b:3f:9d:ea:4a:3e:53:7c:7c:39:17
```

```
CKA_CLASS
```

```
CK_OBJECT_CLASS CKO_NSS_TRUST
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "StartCom Certification Authority G2"
```

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
```

```
\061\361\375\150\042\143\040\356\306\073\077\235\352\112\076\123
\174\174\071\027
```

```
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
```

```
\170\113\373\236\144\202\012\323\270\114\142\363\144\362\220\144
```

```
END
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\054\060\052\006\003\125\004\003
\023\043\123\164\141\162\164\103\157\155\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\107\062
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\001\073
```

```
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

```
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

```
CKA_TRUST_STEP_UP_APPROVED
```

```
CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
```

```
# Certificate "Symantec Class 3 Public Primary Certification Authority - G6"
```

```
# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
```

```
# Serial Number:65:63:71:85:d3:6f:45:c6:8f:7f:31:f9:09:87:92:82
```

```
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
```

```
# Not Valid Before: Thu Oct 18 00:00:00 2012
```

```
# Not Valid After: Tue Dec 01 23:59:59 2037
```



```
# Fingerprint (MD5): 8d:d1:96:24:c4:4c:8f:5d:26:f4:6c:8d:52:41:1a:c6
# Fingerprint (SHA1): 26:a1:6c:23:5a:24:72:22:9b:23:62:80:25:bc:80:97:c8:85:24:a1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\145\143\161\205\323\157\105\306\217\177\061\371\011\207
\222\202
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\366\060\202\003\336\240\003\002\001\002\002\020\145
\143\161\205\323\157\105\306\217\177\061\371\011\207\222\202\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201
\224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035
\060\033\006\003\125\004\012\023\024\123\171\155\141\156\164\145
\143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060
\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143
\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105
```

\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145
\143\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\066\060\036\027\015\061\062\061\060\061\070\060
\060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063
\065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024
\123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141
\164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123
\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145
\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074
\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\063
\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165
\164\150\157\162\151\164\171\040\055\040\107\066\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\267\016\262
\372\115\274\232\162\025\373\167\133\333\375\103\017\313\013\367
\140\056\263\053\176\014\273\123\362\314\116\145\363\031\273\377
\065\035\367\323\251\273\100\055\265\335\170\324\246\371\067\352
\205\005\173\155\267\346\023\113\006\174\373\166\143\217\040\035
\055\070\053\004\205\362\350\260\321\137\115\112\041\311\152\330
\224\352\036\002\120\246\252\220\007\240\107\041\352\146\371\004
\240\346\203\360\304\365\136\226\342\047\115\141\303\263\301\214
\042\266\146\241\000\321\126\051\373\355\301\177\044\312\075\372
\132\224\260\204\303\307\272\103\034\375\144\016\361\050\373\107
\131\362\046\341\061\271\104\371\253\335\373\276\276\054\067\343
\254\013\030\323\374\001\242\361\244\012\065\202\107\114\253\275
\212\136\337\023\205\374\040\314\110\131\257\257\101\157\313\043
\315\312\223\247\335\325\137\310\144\073\377\001\003\240\012\117
\055\156\075\204\276\257\310\062\262\123\051\220\025\367\260\005
\232\012\074\366\271\006\220\311\245\341\135\240\073\260\376\250
\266\277\365\211\050\127\044\072\041\206\161\344\334\212\213\101
\125\354\036\060\044\131\321\300\131\270\170\257\252\132\164\336
\045\200\060\230\355\060\104\157\041\160\034\333\022\123\016\326
\246\050\146\223\054\037\314\117\074\033\201\305\271\366\170\157
\320\062\072\010\162\333\153\016\106\027\205\224\363\274\357\274
\367\244\136\216\351\351\265\144\345\267\113\105\022\054\114\067
\267\140\103\012\115\161\006\000\224\046\065\164\037\273\172\071
\134\116\073\346\270\003\342\307\223\213\204\054\045\111\105\335
\177\043\224\140\037\313\351\315\366\253\227\367\141\347\373\177
\142\201\310\334\012\060\134\030\174\346\316\357\307\156\036\207
\174\263\351\312\310\173\152\364\150\374\203\245\014\126\264\272
\262\215\112\012\307\227\227\305\210\060\025\075\020\010\124\025
\162\162\147\063\063\364\174\267\316\000\047\123\145\316\044\361
\132\144\347\066\057\362\056\002\302\227\337\162\350\002\036\240
\367\075\265\373\150\140\003\372\063\251\346\022\155\006\341\251

\250\135\116\074\376\331\347\000\145\254\266\031\115\173\203\177
\064\107\352\341\030\155\261\213\034\171\253\347\235\002\003\001
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\071\161\010\000\076\336\310\206\347\220\377\344\375\041
\017\316\044\031\026\366\060\015\006\011\052\206\110\206\367\015
\001\001\014\005\000\003\202\002\001\000\120\153\210\115\140\110
\316\132\343\042\316\147\174\204\247\315\034\375\351\014\003\214
\066\257\012\207\016\152\256\127\256\001\320\066\273\362\375\271
\163\301\137\265\250\256\114\242\372\111\313\007\106\026\066\275
\343\310\127\070\176\070\344\277\045\063\140\306\334\067\234\143
\273\136\230\036\032\262\202\360\256\246\167\021\200\104\107\241
\051\305\360\263\072\316\230\360\270\354\323\016\200\006\167\043
\060\114\377\171\144\143\042\133\167\223\103\113\165\263\333\073
\156\073\112\335\361\310\256\265\067\212\225\210\072\020\150\160
\070\271\133\160\176\325\103\311\374\137\117\345\346\173\066\356
\360\040\355\107\127\023\046\020\136\024\006\015\173\166\007\302
\306\055\026\364\256\247\154\017\274\210\017\117\054\002\266\243
\327\042\346\231\107\065\330\215\245\117\201\022\072\021\175\263
\314\013\165\363\036\160\243\033\003\352\372\232\350\346\056\066
\071\314\231\316\072\077\014\267\256\370\103\231\260\223\156\157
\252\331\017\152\061\221\273\234\323\264\050\373\203\114\172\163
\202\120\147\322\016\254\355\140\305\262\135\065\230\317\207\176
\036\131\035\044\274\126\272\332\244\132\330\314\346\274\036\020
\217\033\214\216\363\301\333\267\276\324\260\133\145\217\026\150
\363\126\305\052\031\026\115\017\270\145\207\155\044\203\270\142
\334\340\107\141\032\210\173\316\116\177\375\334\306\015\132\232
\244\363\265\114\366\335\061\246\350\035\021\041\063\060\004\141
\175\034\340\076\117\215\077\265\213\022\000\132\175\251\241\000
\324\203\353\160\273\030\370\244\322\034\201\055\267\010\021\310
\046\173\266\324\345\017\003\106\162\324\045\100\036\276\111\135
\155\223\361\134\262\073\165\124\151\072\240\356\114\042\272\254
\232\342\010\255\105\143\005\112\122\065\166\304\064\365\136\007
\062\255\334\174\046\321\133\217\255\344\346\252\033\165\237\353
\135\264\350\300\251\025\174\116\112\007\162\337\106\311\324\221
\222\165\126\260\341\356\067\066\145\050\305\025\310\053\166\314
\155\157\031\203\364\375\332\025\342\101\347\063\171\106\203\127
\371\361\245\266\155\323\274\327\123\347\356\161\155\170\251\227
\247\356\040\234\031\025\162\025\075\004

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Symantec Class 3 Public Primary Certification Authority - G6"

```

# Issuer: CN=Symantec Class 3 Public Primary Certification Authority
- G6,OU=Symantec Trust Network,O=Symantec Corporation,C=US
# Serial Number:65:63:71:85:d3:6f:45:c6:8f:7f:31:f9:09:87:92:82
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Thu Oct 18 00:00:00 2012
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): 8d:d1:96:24:c4:4c:8f:5d:26:f4:6c:8d:52:41:1a:c6
# Fingerprint (SHA1): 26:a1:6c:23:5a:24:72:22:9b:23:62:80:25:bc:80:97:c8:85:24:a1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G6"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\046\241\154\043\132\044\162\042\233\043\142\200\045\274\200\227
\310\205\044\241
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\215\321\226\044\304\114\217\135\046\364\154\215\122\101\032\306
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\145\143\161\205\323\157\105\306\217\177\061\371\011\207
\222\202
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Symantec Class 3 Public Primary Certification
Authority - G4"
# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
Network,O=Symantec Corporation,C=US

```

```
# Serial Number:4c:79:b5:9a:28:9c:76:31:64:f5:89:44:d0:91:02:de
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Thu Oct 18 00:00:00 2012
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): 36:c9:b7:4b:6c:b0:21:4c:c7:11:17:b1:18:fe:2b:4d
# Fingerprint (SHA1): 58:d5:2d:b9:33:01:a4:fd:29:1a:8c:96:45:a0:8f:ee:7f:52:92:82
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\114\171\265\232\050\234\166\061\144\365\211\104\320\221
\002\336
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\247\060\202\002\055\240\003\002\001\002\002\020\114
\171\265\232\050\234\166\061\144\365\211\104\320\221\002\336\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\224\061\013
```

\060\011\006\003\125\004\006\023\002\125\123\061\035\060\033\006
\003\125\004\012\023\024\123\171\155\141\156\164\145\143\040\103
\157\162\160\157\162\141\164\151\157\156\061\037\060\035\006\003
\125\004\013\023\026\123\171\155\141\156\164\145\143\040\124\162
\165\163\164\040\116\145\164\167\157\162\153\061\105\060\103\006
\003\125\004\003\023\074\123\171\155\141\156\164\145\143\040\103
\154\141\163\163\040\063\040\120\165\142\154\151\143\040\120\162
\151\155\141\162\171\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040
\107\064\060\036\027\015\061\062\061\060\061\070\060\060\060\060
\060\060\132\027\015\063\067\061\062\060\061\062\063\065\071\065
\071\132\060\201\224\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\035\060\033\006\003\125\004\012\023\024\123\171\155
\141\156\164\145\143\040\103\157\162\160\157\162\141\164\151\157
\156\061\037\060\035\006\003\125\004\013\023\026\123\171\155\141
\156\164\145\143\040\124\162\165\163\164\040\116\145\164\167\157
\162\153\061\105\060\103\006\003\125\004\003\023\074\123\171\155
\141\156\164\145\143\040\103\154\141\163\163\040\063\040\120\165
\142\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\040\055\040\107\064\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\127\317\352\263\071\115\077\241\041\340\156\057\070\162\306
\207\227\363\205\013\107\347\017\121\310\321\364\231\233\312\131
\145\377\114\371\352\013\267\045\325\322\366\354\061\055\062\142
\022\327\166\206\247\372\070\311\145\324\376\163\342\204\071\370
\114\111\142\023\335\272\325\210\240\137\075\310\117\260\077\217
\241\120\021\344\223\106\255\303\137\313\361\244\152\225\126\350
\300\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\044\235\274\322\161\367\035\302\045\276\042\361\211\245\054
\025\073\064\036\136\060\012\006\010\052\206\110\316\075\004\003
\003\003\150\000\060\145\002\061\000\271\146\150\145\333\005\320
\070\175\016\363\310\165\141\270\320\050\304\261\112\063\121\130
\373\362\074\020\310\256\107\170\166\312\146\044\027\206\076\120
\126\156\245\055\231\210\270\275\044\002\060\003\352\247\347\250
\074\352\235\142\306\137\124\332\230\364\167\275\117\217\030\234
\221\134\107\153\100\115\020\035\263\341\211\312\013\042\310\032
\305\305\376\213\335\301\337\157\170\237\221

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Symantec Class 3 Public Primary Certification Authority - G4"

```

# Issuer: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Serial Number:4c:79:b5:9a:28:9c:76:31:64:f5:89:44:d0:91:02:de
# Subject: CN=Symantec Class 3 Public Primary Certification Authority - G4,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Thu Oct 18 00:00:00 2012
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): 36:c9:b7:4b:6c:b0:21:4c:c7:11:17:b1:18:fe:2b:4d
# Fingerprint (SHA1): 58:d5:2d:b9:33:01:a4:fd:29:1a:8c:96:45:a0:8f:ee:7f:52:92:82
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Symantec Class 3 Public Primary Certification Authority - G4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\130\325\055\271\063\001\244\375\051\032\214\226\105\240\217\356
\177\122\222\202
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\066\311\267\113\154\260\041\114\307\021\027\261\030\376\053\115
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\171\265\232\050\234\166\061\144\365\211\104\320\221
\002\336
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Hellenic Academic and Research Institutions RootCA 2011"
# Issuer: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR

```

```
# Serial Number: 0 (0x0)
# Subject: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR
# Not Valid Before: Tue Dec 06 13:49:52 2011
# Not Valid After: Mon Dec 01 13:49:52 2031
# Fingerprint (MD5): 73:9f:4c:4b:73:5b:79:e9:fa:ba:1c:ef:6e:cb:d5:c9
# Fingerprint (SHA1): fe:45:65:9b:79:03:5b:98:a1:61:b5:51:2e:ac:da:58:09:48:22:4d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\061\060\202\003\031\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145\156
```


\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164\150
\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023\067
\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155\151
\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111
\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157\164
\103\101\040\062\060\061\061\060\036\027\015\061\061\061\062\060
\066\061\063\064\071\065\062\132\027\015\063\061\061\062\060\061
\061\063\064\071\065\062\132\060\201\225\061\013\060\011\006\003
\125\004\006\023\002\107\122\061\104\060\102\006\003\125\004\012
\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145
\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103\145
\162\164\056\040\101\165\164\150\157\162\151\164\171\061\100\060
\076\006\003\125\004\003\023\067\110\145\154\154\145\156\151\143
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151
\157\156\163\040\122\157\157\164\103\101\040\062\060\061\061\060
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000
\251\123\000\343\056\246\366\216\372\140\330\055\225\076\370\054
\052\124\116\315\271\204\141\224\130\117\217\075\213\344\103\363
\165\211\215\121\344\303\067\322\212\210\115\171\036\267\022\335
\103\170\112\212\222\346\327\110\325\017\244\072\051\104\065\270
\007\366\150\035\125\315\070\121\360\214\044\061\205\257\203\311
\175\351\167\257\355\032\173\235\027\371\263\235\070\120\017\246
\132\171\221\200\257\067\256\246\323\061\373\265\046\011\235\074
\132\357\121\305\053\337\226\135\353\062\036\002\332\160\111\354
\156\014\310\232\067\215\367\361\066\140\113\046\054\202\236\320
\170\363\015\017\143\244\121\060\341\371\053\047\022\007\330\352
\275\030\142\230\260\131\067\175\276\356\363\040\121\102\132\203
\357\223\272\151\025\361\142\235\237\231\071\202\241\267\164\056
\213\324\305\013\173\057\360\310\012\332\075\171\012\232\223\034
\245\050\162\163\221\103\232\247\321\115\205\204\271\251\164\217
\024\100\307\334\336\254\101\144\154\264\031\233\002\143\155\044
\144\217\104\262\045\352\316\135\164\014\143\062\134\215\207\345
\002\003\001\000\001\243\201\211\060\201\206\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003
\125\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016
\004\026\004\024\246\221\102\375\023\141\112\043\236\010\244\051
\345\330\023\004\043\356\101\045\060\107\006\003\125\035\036\004
\100\060\076\240\074\060\005\202\003\056\147\162\060\005\202\003
\056\145\165\060\006\202\004\056\145\144\165\060\006\202\004\056
\157\162\147\060\005\201\003\056\147\162\060\005\201\003\056\145
\165\060\006\201\004\056\145\144\165\060\006\201\004\056\157\162
\147\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\037\357\171\101\341\173\156\077\262\214\206

```
\067\102\112\116\034\067\036\215\146\272\044\201\311\117\022\017
\041\300\003\227\206\045\155\135\323\042\051\250\154\242\015\251
\353\075\006\133\231\072\307\314\303\232\064\177\253\016\310\116
\034\341\372\344\334\315\015\276\277\044\376\154\347\153\302\015
\310\006\236\116\215\141\050\246\152\375\345\366\142\352\030\074
\116\240\123\235\262\072\234\353\245\234\221\026\266\115\202\340
\014\005\110\251\154\365\314\370\313\235\111\264\360\002\245\375
\160\003\355\212\041\245\256\023\206\111\303\063\163\276\207\073
\164\213\027\105\046\114\026\221\203\376\147\175\315\115\143\147
\372\363\003\022\226\170\006\215\261\147\355\216\077\276\237\117
\002\365\263\011\057\363\114\207\337\052\313\225\174\001\314\254
\066\172\277\242\163\172\367\217\301\265\232\241\024\262\217\063
\237\015\357\042\334\146\173\204\275\105\027\006\075\074\312\271
\167\064\217\312\352\317\077\061\076\343\210\343\200\111\045\310
\227\265\235\232\231\115\260\074\370\112\000\233\144\335\237\071
\113\321\047\327\270
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Hellenic Academic and Research Institutions RootCA 2011"

Issuer: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR

Serial Number: 0 (0x0)

Subject: CN=Hellenic Academic and Research Institutions RootCA 2011,O=Hellenic Academic and Research
Institutions Cert. Authority,C=GR

Not Valid Before: Tue Dec 06 13:49:52 2011

Not Valid After: Mon Dec 01 13:49:52 2031

Fingerprint (MD5): 73:9f:4c:4b:73:5b:79:e9:fa:ba:1c:ef:6e:cb:d5:c9

Fingerprint (SHA1): fe:45:65:9b:79:03:5b:98:a1:61:b5:51:2e:ac:da:58:09:48:22:4d

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2011"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\376\105\145\233\171\003\133\230\241\141\265\121\056\254\332\130
\011\110\042\115
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\163\237\114\113\163\133\171\351\372\272\034\357\156\313\325\311
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\107\122
```

```
\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145
\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144
\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164
\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164
\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023
\067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155
\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040
\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157\157
\164\103\101\040\062\060\061\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\001\000
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "ATHEX Root CA"

Issuer: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR

Serial Number: 10012 (0x271c)

Subject: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR

Not Valid Before: Mon Oct 18 15:56:03 2010

Not Valid After: Thu Oct 17 21:00:00 2030

Fingerprint (MD5): af:2b:7a:55:2d:3a:35:02:a4:92:40:16:0c:fa:98:26

Fingerprint (SHA1): db:2b:7b:43:4d:fb:7f:c1:cb:59:26:ec:5d:95:21:fe:35:0f:f2:79

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ATHEX Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122
\157\157\164\040\103\101
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122
```

\157\157\164\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\002\047\034

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\067\060\202\002\037\240\003\002\001\002\002\002\047
\034\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122
\157\157\164\040\103\101\060\036\027\015\061\060\061\060\061\070
\061\065\065\066\060\063\132\027\015\063\060\061\060\061\067\062
\061\060\060\060\060\132\060\104\061\013\060\011\006\003\125\004
\006\023\002\107\122\061\035\060\033\006\003\125\004\012\023\024
\101\164\150\145\156\163\040\105\170\143\150\141\156\147\145\040
\123\056\101\056\061\026\060\024\006\003\125\004\003\023\015\101
\124\110\105\130\040\122\157\157\164\040\103\101\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\315\032\075
\060\265\263\070\262\277\172\273\256\241\326\327\205\360\042\072
\244\211\151\304\341\142\004\311\160\323\074\063\022\342\346\070
\345\167\244\044\104\144\015\267\256\114\132\335\341\030\006\076
\355\233\132\005\365\341\336\022\355\066\052\334\107\331\221\121
\231\355\261\277\152\163\241\012\010\044\250\212\215\034\013\131
\323\277\160\043\125\104\240\214\060\305\316\155\117\260\354\276
\363\214\061\337\012\132\334\323\127\134\005\240\063\225\073\227
\217\124\013\270\365\153\175\307\305\254\265\171\216\006\070\361
\250\051\125\075\232\066\320\047\137\064\152\022\170\027\050\331
\230\111\354\331\132\122\332\046\072\372\356\114\246\046\216\250
\076\125\037\262\037\341\265\233\371\072\065\366\355\221\034\375
\013\020\044\375\037\371\323\343\000\045\261\013\045\300\267\175
\232\074\007\072\200\013\326\250\376\221\105\350\301\322\305\042
\157\323\345\161\037\266\054\066\264\130\240\355\315\112\150\344
\152\127\364\241\165\354\327\000\231\325\366\231\134\353\116\311
\273\327\032\243\105\131\000\017\214\073\333\164\065\002\003\001
\000\001\243\063\060\061\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\021\006\003\125\035\016\004\012
\004\010\103\342\200\350\273\322\267\301\060\013\006\003\125\035
\017\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\003\202\001\001\000\077\001\143\165\007
\062\053\137\165\377\166\216\323\251\270\157\314\120\075\204\127
\117\050\203\350\174\243\156\242\274\367\302\272\256\072\253\116
\320\017\222\050\270\335\133\054\333\345\326\037\072\223\341\221
\016\327\252\137\001\141\054\076\141\117\336\225\025\115\314\075
\352\062\342\243\376\370\026\251\362\274\051\374\051\236\175\162
\245\135\241\153\002\325\137\110\364\240\073\313\030\106\360\075

```
\027\125\203\320\051\141\221\273\232\101\111\321\023\276\101\224
\362\076\303\044\253\237\307\153\102\220\102\171\176\132\121\373
\074\136\013\041\037\313\331\110\023\025\261\152\177\003\304\321
\272\121\322\160\211\252\010\112\207\034\366\172\230\261\324\121
\005\125\306\220\027\157\303\340\004\300\172\364\057\030\242\126
\102\163\056\266\262\233\321\071\276\011\302\002\112\044\027\371
\367\254\275\161\007\277\225\342\227\345\241\204\010\215\262\342
\104\241\334\211\060\073\250\014\005\172\135\166\000\117\036\157
\161\177\053\071\332\105\102\071\061\322\251\062\100\324\070\143
\023\226\067\232\111\135\331\307\375\270\114
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ATHEX Root CA"

Issuer: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR

Serial Number: 10012 (0x271c)

Subject: CN=ATHEX Root CA,O=Athens Exchange S.A.,C=GR

Not Valid Before: Mon Oct 18 15:56:03 2010

Not Valid After: Thu Oct 17 21:00:00 2030

Fingerprint (MD5): af:2b:7a:55:2d:3a:35:02:a4:92:40:16:0c:fa:98:26

Fingerprint (SHA1): db:2b:7b:43:4d:fb:7f:c1:cb:59:26:ec:5d:95:21:fe:35:0f:f2:79

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ATHEX Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\333\053\173\103\115\373\177\301\313\131\046\354\135\225\041\376
\065\017\362\171
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\257\053\172\125\055\072\065\002\244\222\100\026\014\372\230\046
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\104\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\035\060\033\006\003\125\004\012\023\024\101\164\150\145\156\163
\040\105\170\143\150\141\156\147\145\040\123\056\101\056\061\026
\060\024\006\003\125\004\003\023\015\101\124\110\105\130\040\122
\157\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\002\047\034
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Halcom Root CA"
# Issuer: CN=Halcom Root CA,O=Halcom,C=SI
# Serial Number: 504275 (0x7b1d3)
# Subject: CN=Halcom Root CA,O=Halcom,C=SI
# Not Valid Before: Wed Feb 08 09:55:41 2012
# Not Valid After: Sun Feb 08 09:55:41 2032
# Fingerprint (MD5): c3:8b:d2:53:ac:00:ec:d1:db:97:61:a5:38:d9:7d:87
# Fingerprint (SHA1): 53:5b:00:16:72:ab:bf:7b:6c:c2:54:05:ae:4d:24:fe:03:3f:d1:cc
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
```

```
END
```

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
```

```
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

```
\002\003\007\261\323
```

```
END
```

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\003\036\060\202\002\006\240\003\002\001\002\002\003\007
\261\323\060\015\006\011\052\206\110\206\367\015\001\001\015\005
\000\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157
\155\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143
\157\155\040\122\157\157\164\040\103\101\060\036\027\015\061\062
\060\062\060\070\060\071\065\065\064\061\132\027\015\063\062\060
\062\060\070\060\071\065\065\064\061\132\060\067\061\013\060\011
\006\003\125\004\006\023\002\123\111\061\017\060\015\006\003\125
```

\004\012\023\006\110\141\154\143\157\155\061\027\060\025\006\003
\125\004\003\023\016\110\141\154\143\157\155\040\122\157\157\164
\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\211\271\205\312\376\364\165\175\177\354\235\102
\067\272\272\215\274\354\075\027\003\375\331\105\145\326\315\311
\116\137\214\110\134\227\010\127\024\213\055\234\074\220\111\231
\317\151\257\111\215\333\034\001\260\156\351\364\352\221\147\135
\312\263\151\117\330\314\301\015\075\356\252\003\166\340\311\160
\242\237\376\353\233\320\266\311\226\323\360\373\133\320\360\007
\253\114\136\115\244\342\107\136\005\150\164\246\216\042\107\356
\176\323\147\204\124\067\222\107\016\363\243\354\025\032\363\155
\173\277\031\065\041\217\202\113\254\124\234\011\315\156\266\301
\127\275\320\111\075\157\237\163\216\261\154\176\275\376\326\273
\075\003\350\346\114\032\264\356\257\264\203\116\062\220\124\366
\116\033\341\057\316\245\064\032\216\243\040\371\331\076\042\153
\157\156\343\372\331\063\134\010\240\367\025\000\075\234\020\222
\112\125\315\200\262\006\252\375\327\217\267\132\222\047\044\017
\063\074\050\272\361\037\150\265\167\051\136\256\302\332\215\066
\160\342\172\062\033\043\246\336\305\141\015\232\245\022\040\265
\363\226\131\265\002\003\001\000\001\243\063\060\061\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\021
\006\003\125\035\016\004\012\004\010\116\224\330\212\143\302\317
\171\060\013\006\003\125\035\017\004\004\003\002\001\006\060\015
\006\011\052\206\110\206\367\015\001\001\015\005\000\003\202\001
\001\000\051\276\347\261\344\372\003\242\017\257\166\131\235\370
\116\123\115\074\004\203\237\241\342\214\366\224\331\264\256\150
\052\126\153\062\123\050\203\007\162\114\260\116\250\035\201\203
\041\147\003\067\321\214\306\301\116\204\351\064\073\323\365\365
\047\266\215\043\005\122\270\114\062\362\056\332\321\052\175\076
\203\003\052\322\261\343\232\351\212\203\102\360\054\012\241\123
\017\300\053\342\217\032\116\225\271\105\274\113\147\072\275\062
\363\255\245\217\217\303\056\352\366\364\173\142\320\156\156\305
\141\061\023\146\346\147\111\231\073\057\200\117\172\174\163\212
\003\015\137\365\263\062\050\012\212\300\341\371\270\243\046\356
\334\033\127\317\166\032\117\123\276\366\112\213\127\027\053\057
\231\206\252\336\214\332\266\250\154\337\150\066\326\141\213\156
\300\163\116\267\071\105\364\175\316\111\304\363\035\371\251\167
\154\357\357\222\025\023\047\231\106\350\237\251\212\033\237\051
\057\242\035\076\326\053\307\344\125\020\072\030\367\263\173\117
\056\307\000\042\355\344\061\320\347\270\344\124\117\301\200\105
\045\156

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```

# Microsoft Code Signing Only Certificate
# Trust for "Halcom Root CA"
# Issuer: CN=Halcom Root CA,O=Halcom,C=SI
# Serial Number: 504275 (0x7b1d3)
# Subject: CN=Halcom Root CA,O=Halcom,C=SI
# Not Valid Before: Wed Feb 08 09:55:41 2012
# Not Valid After: Sun Feb 08 09:55:41 2032
# Fingerprint (MD5): c3:8b:d2:53:ac:00:ec:d1:db:97:61:a5:38:d9:7d:87
# Fingerprint (SHA1): 53:5b:00:16:72:ab:bf:7b:6c:c2:54:05:ae:4d:24:fe:03:3f:d1:cc
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\123\133\000\026\162\253\277\173\154\302\124\005\256\115\044\376
\003\077\321\314
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\303\213\322\123\254\000\354\321\333\227\141\245\070\331\175\207
END
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\007\261\323
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Swisscom Root EV CA 2"
# Issuer: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Serial Number:f2:fa:64:e2:74:63:d3:8d:fd:10:1d:04:1f:76:ca:58
# Subject: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Not Valid Before: Fri Jun 24 09:45:08 2011
# Not Valid After: Wed Jun 25 08:45:08 2031
# Fingerprint (MD5): 7b:30:34:9f:dd:0a:4b:6b:35:ca:31:51:28:5d:ae:ec
# Fingerprint (SHA1): e7:a1:90:29:d3:d5:52:dc:0d:0f:c6:92:d3:ea:88:0d:15:2e:1a:6b
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

```



```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root EV CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\105\126\040\103\101\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\105\126\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\362\372\144\342\164\143\323\215\375\020\035\004\037
\166\312\130
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\340\060\202\003\310\240\003\002\001\002\002\021\000
\362\372\144\342\164\143\323\215\375\020\035\004\037\166\312\130
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021
\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157
\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151
\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040
\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125\004
\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157\164
\040\105\126\040\103\101\040\062\060\036\027\015\061\061\060\066
\062\064\060\071\064\065\060\070\132\027\015\063\061\060\066\062
\065\060\070\064\065\060\070\132\060\147\061\013\060\011\006\003
\125\004\006\023\002\143\150\061\021\060\017\006\003\125\004\012
\023\010\123\167\151\163\163\143\157\155\061\045\060\043\006\003
\125\004\013\023\034\104\151\147\151\164\141\154\040\103\145\162
\164\151\146\151\143\141\164\145\040\123\145\162\166\151\143\145
\163\061\036\060\034\006\003\125\004\003\023\025\123\167\151\163
\163\143\157\155\040\122\157\157\164\040\105\126\040\103\101\040
\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
```

\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\304\367\035\057\127\352\127\154\367\160\135\143\260\161
\122\011\140\104\050\063\243\172\116\012\372\330\352\154\213\121
\026\032\125\256\124\046\304\314\105\007\101\117\020\171\177\161
\322\172\116\077\070\116\263\000\306\225\312\133\315\301\052\203
\327\047\037\061\016\043\026\267\045\313\034\264\271\200\062\136
\032\235\223\361\350\074\140\054\247\136\127\031\130\121\136\274
\054\126\013\270\330\357\213\202\264\074\270\302\044\250\023\307
\240\041\066\033\172\127\051\050\247\056\277\161\045\220\363\104
\203\151\120\244\344\341\033\142\031\224\011\243\363\303\274\357
\364\275\354\333\023\235\317\235\110\011\122\147\300\067\051\021
\036\373\322\021\247\205\030\164\171\344\117\205\024\353\122\067
\342\261\105\330\314\015\103\177\256\023\322\153\053\077\247\302
\342\250\155\166\133\103\237\276\264\235\263\046\206\073\037\177
\345\362\350\146\050\026\045\320\113\227\070\247\344\317\011\321
\066\303\013\276\332\073\104\130\215\276\361\236\011\153\076\363
\062\307\053\207\306\354\136\234\366\207\145\255\063\051\304\057
\211\331\271\313\311\003\235\373\154\224\121\227\020\033\206\013
\032\033\077\366\002\176\173\324\305\121\144\050\235\365\323\254
\203\201\210\323\164\264\131\235\301\353\141\063\132\105\321\313
\071\320\006\152\123\140\035\257\366\373\151\274\152\334\001\317
\275\371\217\331\275\133\301\072\137\216\332\017\113\251\233\235
\052\050\153\032\012\174\074\253\042\013\345\167\055\161\366\202
\065\201\256\370\173\201\346\352\376\254\364\032\233\164\134\350
\217\044\366\135\235\106\304\054\322\036\053\041\152\203\047\147
\125\112\244\343\310\062\227\146\220\162\332\343\324\144\056\137
\343\241\152\366\140\324\347\065\315\312\304\150\215\327\161\310
\323\044\063\163\261\154\371\152\341\050\333\137\306\075\350\276
\125\346\067\033\355\044\331\017\031\217\137\143\030\130\120\201
\121\145\157\362\237\176\152\004\347\064\044\161\272\166\113\130
\036\031\275\025\140\105\252\014\022\100\001\235\020\342\307\070
\007\162\012\145\300\266\273\045\051\332\026\236\213\065\213\141
\355\345\161\127\203\265\074\161\237\343\117\277\176\036\201\237
\101\227\002\003\001\000\001\243\201\206\060\201\203\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035\006
\003\125\035\041\004\026\060\024\060\022\006\007\140\205\164\001
\123\002\002\006\007\140\205\164\001\123\002\002\060\022\006\003
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\003
\060\035\006\003\125\035\016\004\026\004\024\105\331\245\201\156
\075\210\115\215\161\322\106\301\156\105\036\363\304\200\235\060
\037\006\003\125\035\043\004\030\060\026\200\024\105\331\245\201
\156\075\210\115\215\161\322\106\301\156\105\036\363\304\200\235
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\002\001\000\224\072\163\006\237\122\113\060\134\324\376\261
\134\045\371\327\216\157\365\207\144\237\355\024\216\270\004\216
\050\113\217\252\173\216\071\264\331\130\366\173\241\065\012\241
\235\212\367\143\345\353\275\071\202\324\343\172\055\157\337\023
\074\272\376\176\126\230\013\363\124\237\315\104\116\156\074\341

\076\025\277\006\046\235\344\360\220\266\324\302\236\060\056\037
\357\307\172\304\120\307\352\173\332\120\313\172\046\313\000\264
\132\253\265\223\037\200\211\204\004\225\215\215\177\011\223\277
\324\250\250\344\143\155\331\144\344\270\051\132\010\277\120\341
\204\017\125\173\137\010\042\033\365\275\231\036\024\366\316\364
\130\020\202\263\012\075\031\301\277\133\253\252\231\330\362\061
\275\345\070\146\334\130\005\307\355\143\032\056\012\227\174\207
\223\053\262\212\343\361\354\030\345\165\266\051\207\347\334\213
\032\176\264\330\311\323\212\027\154\175\051\104\276\212\252\365
\176\072\056\150\061\223\271\152\332\232\340\333\351\056\245\204
\315\034\012\270\112\010\371\234\361\141\046\230\223\267\173\146
\354\221\136\335\121\077\333\163\017\255\004\130\011\335\004\002
\225\012\076\323\166\337\246\020\036\200\075\350\315\244\144\321
\063\307\222\307\342\116\104\343\011\311\116\302\135\207\016\022
\236\277\017\311\005\020\336\172\243\261\074\362\077\245\252\047
\171\255\061\175\037\375\374\031\151\305\335\271\077\174\315\306
\264\302\060\036\176\156\222\327\177\141\166\132\217\353\225\115
\274\021\156\041\174\131\067\231\320\006\274\371\006\155\062\026
\245\331\151\250\341\334\074\200\036\140\121\334\327\124\041\036
\312\142\167\117\372\330\217\263\053\072\015\170\162\311\150\101
\132\107\112\302\243\353\032\327\012\253\074\062\125\310\012\021
\234\337\164\326\360\100\025\035\310\271\217\265\066\305\257\370
\042\270\312\035\363\326\266\031\017\237\141\145\152\352\164\310
\174\217\303\117\135\145\202\037\331\015\211\332\165\162\373\357
\361\107\147\023\263\310\321\031\210\047\046\232\231\171\177\036
\344\054\077\173\356\361\336\115\213\226\227\303\325\077\174\033
\043\355\244\263\035\026\162\103\113\040\341\131\176\302\350\255
\046\277\242\367

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Swisscom Root EV CA 2"

Issuer: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

Serial Number:f2:fa:64:e2:74:63:d3:8d:fd:10:1d:04:1f:76:ca:58

Subject: CN=Swisscom Root EV CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch

Not Valid Before: Fri Jun 24 09:45:08 2011

Not Valid After: Wed Jun 25 08:45:08

2031

Fingerprint (MD5): 7b:30:34:9f:dd:0a:4b:6b:35:ca:31:51:28:5d:ae:ec

Fingerprint (SHA1): e7:a1:90:29:d3:d5:52:dc:0d:0f:c6:92:d3:ea:88:0d:15:2e:1a:6b

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

CKA_LABEL UTF8 "Swisscom Root EV CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\347\241\220\051\323\325\122\334\015\017\306\222\323\352\210\015
\025\056\032\153
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\173\060\064\237\335\012\113\153\065\312\061\121\050\135\256\354
END
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\036\060\034\006\003\125
\004\003\023\025\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\105\126\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\362\372\144\342\164\143\323\215\375\020\035\004\037
\166\312\130
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "CFCA GT CA"
# Issuer: O=CFCA GT CA,C=CN
# Serial Number:19:99:3c:3f
# Subject: O=CFCA GT CA,C=CN
# Not Valid Before: Mon Jun 13 08:15:09 2011
# Not Valid After: Tue Jun 09 08:15:09 2026
# Fingerprint (MD5): 2c:cd:f3:c5:59:a6:84:64:a0:67:50:ff:4b:4c:d6:14
# Fingerprint (SHA1): ea:bd:a2:40:44:0a:bb:d6:94:93:0a:01:d0:97:64:c6:c2:d7:79:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CFCA GT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107
\124\040\103\101
END
CKA_ID

```

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107
\124\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\004\031\231\074\077

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\037\060\202\002\007\240\003\002\001\002\002\004\031
\231\074\077\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\042\061\013\060\011\006\003\125\004\006\023\002\103
\116\061\023\060\021\006\003\125\004\012\023\012\103\106\103\101
\040\107\124\040\103\101\060\036\027\015\061\061\060\066\061\063
\060\070\061\065\060\071\132\027\015\062\066\060\066\060\071\060
\070\061\065\060\071\132\060\042\061\013\060\011\006\003\125\004
\006\023\002\103\116\061\023\060\021\006\003\125\004\012\023\012
\103\106\103\101\040\107\124\040\103\101\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\277\163\306\132\053
\214\170\366\130\267\374\322\027\220\245\053\164\354\201\054\223
\315\122\314\156\344\052\313\044\241\061\344\255\060\156\343\230
\042\061\327\041\233\237\325\017\067\057\132\273\070\242\267\171
\046\147\326\015\305\027\052\234\271\124\004\341\015\165\206\156
\330\314\305\200\147\033\310\214\055\000\046\206\074\172\171\076
\266\251\302\116\040\260\067\227\306\205\166\022\202\012\347\124
\273\213\376\075\256\343\354\153\130\103\366\245\067\353\130\242
\275\220\304\345\373\312\153\312\060\154\267\173\211\366\061\322
\214\377\117\302\226\045\103\251\161\065\045\013\030\341\254\310
\243\044\266\161\223\214\361\135\374\234\020\005\173\377\300\133
\340\261\227\255\037\330\376\105\365\300\037\235\133\107\071\034
\006\372\333\146\205\333\044\043\352\173\322\071\040\370\353\052
\262\032\121\363\224\132\050\002\116\247\134\107\156\317\374\331
\350\346\141\132\026\047\307\025\015\230\331\350\323\003\065\220
\051\337\262\057\215\020\167\043\310\270\172\323\021\141\152\363
\377\201\222\245\354\102\113\150\116\200\327\002\003\001\000\001
\243\135\060\133\060\037\006\003\125\035\043\004\030\060\026\200
\024\214\166\120\316\045\323\171\053\074\364\155\235\232\341\236
\005\117\350\075\045\060\014\006\003\125\035\023\004\005\060\003
\001\001\377\060\013\006\003\125\035\017\004\004\003\002\001\306
\060\035\006\003\125\035\016\004\026\004\024\214\166\120\316\045
\323\171\053\074\364\155\235\232\341\236\005\117\350\075\045\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\001\001\000\276\273\226\130\324\335\211\211\017\054\315\372\143
\105\166\015\071\200\232\215\372\250\105\141\075\041\125\350\316
\150\307\031\351\302\261\007\302\213\073\057\317\141\205\220\247
\122\027\062\072\257\012\005\025\310\306\316\335\216\224\046\006

```
\370\320\140\356\263\156\324\015\272\132\335\253\240\174\120\162
\246\325\220\223\126\327\131\071\333\350\177\263\225\170\123\201
\122\122\137\364\222\201\002\301\373\042\271\321\003\127\247\176
\313\373\300\106\274\023\164\114\050\053\166\222\151\037\301\120
\221\021\305\114\336\013\224\214\027\203\214\257\067\207\264\352
\153\157\242\132\065\101\141\205\057\234\027\300\373\271\016\242
\141\006\107\166\274\220\011\230\164\015\322\010\057\275\344\015
\162\361\246\137\303\174\300\175\352\274\323\253\040\221\313\134
\005\214\235\250\065\372\066\126\273\011\363\204\135\326\361\342
\054\236\331\176\361\202\240\341\267\057\176\355\371\173\240\000
\270\262\336\035\171\341\201\363\122\131\232\024\135\347\302\021
\363\232\303\072\170\043\276\116\146\336\244\071\151\362\230\072
\054\012\000
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "CFCA GT CA"

Issuer: O=CFCA GT CA,C=CN

Serial Number:19:99:3c:3f

Subject: O=CFCA GT CA,C=CN

Not Valid Before: Mon

Jun 13 08:15:09 2011

Not Valid After: Tue Jun 09 08:15:09 2026

Fingerprint (MD5): 2c:cd:f3:c5:59:a6:84:64:a0:67:50:ff:4b:4c:d6:14

Fingerprint (SHA1): ea:bd:a2:40:44:0a:bb:d6:94:93:0a:01:d0:97:64:c6:c2:d7:79:66

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CFCA GT CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\352\275\242\100\104\012\273\326\224\223\012\001\320\227\144\306
\302\327\171\146
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\054\315\363\305\131\246\204\144\240\147\120\377\113\114\326\024
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\042\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\023\060\021\006\003\125\004\012\023\012\103\106\103\101\040\107
\124\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\004\031\231\074\077
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Digidentity L3 Root CA - G2"
# Issuer: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL
# Serial Number: 1 (0x1)
# Subject: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL
# Not Valid Before: Fri Apr 29 10:44:19 2011
# Not Valid After: Mon Nov 10 10:44:19 2031
# Fingerprint (MD5): 26:8f:5b:c8:b6:3f:88:8c:4c:49:08:2e:18:c1:02:10
# Fingerprint (SHA1): f1:38:a3:30:a4:ea:98:6b:eb:52:0b:b1:10:35:87:6e:fb:9d:7f:1c
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Digidentity L3 Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062
```

```
END
CKA_ID
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
```

```
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\241\060\202\003\211\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061\031
\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145\156
\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003\125
\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171\040
```

\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062\060
\036\027\015\061\061\060\064\062\071\061\060\064\064\061\071\132
\027\015\063\061\061\061\061\060\061\060\064\064\061\071\132\060
\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061\031
\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145\156
\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003\125
\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171\040
\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062\060
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000
\270\021\243\105\336\001\107\126\015\142\270\216\272\130\146\134
\372\062\306\153\200\156\270\177\370\123\337\176\337\142\250\301
\127\117\232\105\045\310\112\105\055\123\070\044\263\040\254\117
\352\255\377\232\020\257\177\342\016\312\264\016\044\045\221\316
\166\216\020\251\057\231\123\247\220\113\004\213\155\172\271\101
\033\323\001\171\214\237\101\153\271\220\327\201\022\032\007\226
\320\011\257\351\344\152\041\123\200\270\206\236\142\150\103\255
\263\152\025\372\366\155\003\062\152\065\261\120\023\110\307\172
\265\041\023\234\004\234\332\223\371\152\053\301\247\030\375\366
\300\176\131\366\373\347\016\021\265\334\043\352\034\357\147\005
\127\316\027\351\361\173\261\321\062\044\214\317\145\347\324\274
\066\031\160\174\242\047\041\326\200\322\055\025\117\112\265\340
\125\220\225\121\223\041\200\363\234\104\037\377\035\125\125\344
\342\020\021\224\026\123\320\376\257\363\357\227\272\106\342\167
\133\313\326\242\131\021\210\246\347\125\101\303\222\145\035\043
\024\142\024\177\045\162\040\366\244\207\051\157\007\374\376\340
\320\030\322\227\371\024\216\066\306\350\014\030\227\361\166\034
\364\044\332\343\112\371\267\114\022\031\147\363\360\341\123\373
\135\344\300\164\143\137\045\221\012\331\076\364\063\254\344\013
\165\137\316\346\230\274\124\015\235\242\061\305\025\124\135\042
\034\213\072\124\246\015\321\327\043\072\254\076\252\112\027\144
\166\055\015\373\124\345\353\202\074\071\101\103\235\341\256\171
\140\317\146\356\307\161\203\173\014\153\011\333\236\242\115\116
\106\223\150\267\372\147\341\332\277\337\221\200\332\243\242\211
\255\136\154\314\113\167\165\144\157\215\044\343\210\210\013\343
\077\351\277\247\345\126\142\015\203\177\275\152\141\310\220\211
\170\133\014\257\022\052\342\223\255\144\347\331\105\056\366\260
\310\253\105\356\160\070\157\273\065\076\026\376\253\236\303\146
\057\363\276\011\140\325\157\200\275\115\333\257\215\376\014\140
\063\153\017\350\235\153\304\060\167\237\054\120\070\320\230\151
\354\067\350\236\017\344\142\352\372\377\021\104\124\331\357\315
\223\165\221\114\341\211\145\246\224\271\123\371\371\111\143\305
\002\003\001\000\001\243\201\211\060\201\206\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003
\125\035\016\004\026\004\024\053\043\040\140\275\055\212\210\107
\254\255\053\276\002\071\272\230\324\354\230\060\104\006\003\125
\035\040\004\075\060\073\060\071\006\004\125\035\040\000\060\061

\060\057\006\010\053\006\001\005\005\007\002\001\026\043\150\164
\164\160\072\057\057\160\153\151\056\144\151\147\151\144\145\156
\164\151\164\171\056\145\165\057\166\141\154\151\144\141\164\151
\145\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\003\202\002\001\000\251\375\357\272\217\033\176\062\022\147\035
\101\015\055\246\213\317\362\364\255\126\170\176\012\230\330\233
\250\321\264\113\054\046\254\344\322\177\147\067\275\011\215\345
\271\163\021\072\156\011\307\127\144\007\041\064\370\016\135\052
\330\221\174\361\124\121\274\234\360\014\152\102\364\074\001\116
\223\105\101\075\254\363\230\113\036\161\036\063\131\062\377\174
\060\360\134\344\341\276\055\056\265\352\335\142\041\016\075\264
\015\225\374\311\270\331\272\240\367\142\247\355\303\003\256\010
\054\101\325\357\103\161\070\267\024\162\256\077\364\024\164\107
\330\336\214\121\171\316\357\261\124\254\160\107\226\176\055\056
\335\233\356\241\001\056\031\357\276\130\140\161\055\255\227\133
\132\140\060\313\062\202\142\116\126\345\147\152\264\322\061\124
\162\077\002\320\274\060\071\217\267\103\011\052\037\046\073\014
\307\174\035\233\200\140\204\016\351\056\322\371\025\273\133\340
\212\244\000\351\343\051\373\050\133\275\066\105\140\041\103\061
\377\160\241\137\134\203\133\227\174\015\267\123\131\354\230\265
\116\342\051\261\324\174\106\343\350\343\103\352\072\226\065\037
\123\361\004\026\045\343\054\363\150\241\246\221\337\025\373\275
\237\346\116\236\302\124\153\176\042\127\343\244\234\134\042\045
\037\201\257\231\310\337\021\025\110\103\370\263\063\251\043\177
\016\063\217\274\106\035\103\264\073\140\365\227\205\031\242\026
\260\125\334\032\160\051\145\332\331\176\011\027\064\353\211\272
\351\141\222\330\336\064\143\074\112\125\152\277\332\206\355\316
\063\336\273\123\157\317\034\332\224\117\166\124\254\145\125\020
\123\232\310\270\153\334\006\346\272\345\121\325\101\177\037\304
\300\101\241\140\221\064\363\023\202\321\241\167\323\367\114\344
\031\377\327\104\232\260\265\274\334\312\136\217\334\316\361\240
\151\066\340\104\222\056\231\372\274\257\263\307\170\072\125\146
\307\153\245\344\151\046\351\064\035\037\052\227\012\351\167\251
\167\133\163\110\062\201\277\377\321\354\203\305\160\203\151\236
\230\033\303\127\337\221\225\034\200\374\215\350\226\203\005\323
\237\172\210\173\372\350\127\361\301\204\050\275\315\326\034\314
\245\342\111\012\163

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Digidentity L3 Root CA - G2"

Issuer: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL

Serial Number: 1 (0x1)

Subject: CN=Digidentity L3 Root CA - G2,O=Digidentity B.V.,C=NL

```

# Not Valid Before: Fri Apr 29 10:44:19 2011
# Not Valid After: Mon Nov 10 10:44:19 2031
# Fingerprint (MD5): 26:8f:5b:c8:b6:3f:88:8c:4c:49:08:2e:18:c1:02:10
# Fingerprint
(SHA1): f1:38:a3:30:a4:ea:98:6b:eb:52:0b:b1:10:35:87:6e:fb:9d:7f:1c
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Digidentity L3 Root CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\361\070\243\060\244\352\230\153\353\122\013\261\020\065\207\156
\373\235\177\034
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\217\133\310\266\077\210\214\114\111\010\056\030\301\002\020
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\031\060\027\006\003\125\004\012\023\020\104\151\147\151\144\145
\156\164\151\164\171\040\102\056\126\056\061\044\060\042\006\003
\125\004\003\023\033\104\151\147\151\144\145\156\164\151\164\171
\040\114\063\040\122\157\157\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SITHS Root CA v1"
# Issuer: CN=SITHS Root CA v1,O=Inera AB,C=SE
# Serial Number:90:66:61:a8:62:3d:65:44:77:04:3f:71:9a:c3:97:0c
# Subject: CN=SITHS Root CA v1,O=Inera AB,C=SE
# Not Valid Before: Thu Mar 29 07:54:49 2012
# Not Valid After: Mon Mar 29 07:54:49 2032
# Fingerprint (MD5): 7f:7b:02:6c:68:9f:32:03:c7:af:04:9d:ec:23:df:f3
# Fingerprint (SHA1): 58:5f:78:75:be:e7:43:3e:b0:79:ea:ab:7d:05:bb:0f:7a:f2:bc:cc
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SITHS Root CA v1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA_SUBJECT MULTILINE_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124
\110\123\040\122\157\157\164\040\103\101\040\166\061

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124
\110\123\040\122\157\157\164\040\103\101\040\166\061

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\220\146\141\250\142\075\145\104\167\004\077\161\232
\303\227\014

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\223\060\202\003\173\240\003\002\001\002\002\021\000
\220\146\141\250\142\075\145\104\167\004\077\161\232\303\227\014
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061\021
\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040\101
\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124\110
\123\040\122\157\157\164\040\103\101\040\166\061\060\036\027\015
\061\062\060\063\062\071\060\067\065\064\064\071\132\027\015\063
\062\060\063\062\071\060\067\065\064\064\071\132\060\073\061\013
\060\011\006\003\125\004\006\023\002\123\105\061\021\060\017\006
\003\125\004\012\014\010\111\156\145\162\141\040\101\102\061\031
\060\027\006\003\125\004\003\014\020\123\111\124\110\123\040\122
\157\157\164\040\103\101\040\166\061\060\202\002\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017
\000\060\202\002\012\002\202\002\001\000\300\355\346\236\250\254
\250\377\330\065\271\374\373\360\225\117\077\075\107\043\321\222
\311\311\370\360\342\037\206\255\210\077\340\000\317\117\021\225
\141\075\245\326\040\031\321\210\322\302\126\011\105\040\241\052
\352\042\303\352\272\314\102\151\236\270\205\237\160\300\154\247
\276\157\243\134\335\103\210\007\315\312\051\337\151\172\037\055
\237\126\152\033\142\040\041\141\306\120\113\145\165\111\106\277
\134\327\051\036\302\036\205\102\341\016\070\115\303\066\161\102
\104\121\072\321\130\314\311\264\252\154\100\307\203\361\307\011
\237\112\363\153\363\007\026\065\364\202\216\136\213\204\334\161
\171\271\373\156\127\105\267\305\160\072\377\102\002\321\064\277
\205\160\155\117\217\347\037\031\041\367\325\064\274\356\131\346
\056\042\363\161\202\142\031\237\005\144\174\073\042\161\030\245
\055\301\170\130\231\321\257\336\224\100\006\031\166\023\120\207
\043\313\107\127\256\154\305\023\352\232\205\122\303\312\127\046

\037\336\026\155\255\161\176\362\330\141\375\346\066\116\161\032
\235\323\040\065\255\022\041\130\165\066\213\211\026\244\067\050
\317\240\203\072\100\243\312\021\357\264\345\220\033\343\145\222
\147\230\157\016\051\345\147\030\327\210\372\215\266\307\172\245
\240\177\221\036\253\266\371\164\230\166\122\140\057\132\067\231
\250\333\321\076\326\204\152\157\122\323\264\332\032\307\270\262
\321\224\021\037\305\210\211\351\133\251\243\224\346\242\175\115
\247\062\211\241\336\046\153\315\325\243\362\062\033\332\065\023
\211\021\111\115\277\106\061\273\351\055\023\370\016\000\245\376
\003\365\126\106\074\217\023\053\340\345\307\036\003\337\212\352
\106\205\105\206\331\355\136\013\270\144\223\364\320\130\056\051
\215\105\127\115\211\165\220\145\314\152\073\301\234\200\271\264
\200\065\003\216\337\156\052\223\276\246\276\012\001\104\157\100
\163\252\052\202\034\204\166\177\151\335\261\273\222\130\350\100
\121\162\134\367\076\071\104\372\245\231\240\177\215\213\260\101
\130\167\255\042\305\240\300\272\375\061\231\065\152\331\311\040
\032\136\363\275\274\010\177\335\111\055\057\235\221\020\015\133
\250\077\317\264\127\163\073\133\340\147\002\003\001\000\001\243
\201\221\060\201\216\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\114\006\003\125\035\040\004\105\060
\103\060\101\006\011\052\205\160\112\010\001\002\001\001\060\064
\060\062\006\010\053\006\001\005\005\007\002\001\026\046\150\164
\164\160\072\057\057\143\160\163\056\163\151\164\150\163\056\163
\145\057\163\151\164\150\163\162\157\157\164\143\141\166\061\056
\150\164\155\154\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\062
\371\235\117\151\351\230\215\240\326\214\175\371\035\316\243\074
\272\166\025\060\015\006\011\052\206\110\206\367\015\001\001\005
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\230\245\044\122\070\063\332\144\042\043\200\256\376\075\200\276
\117\217\335\203\366\015\114\063\132\325\243\073\120\212\122\132
\046\024\163\121\224\344\122\227\143\333\267\006\250\357\217\255
\342\355\336\243\277\040\321\106\333\055\170\350\054\047\104\234
\074\354\267\027\374\211\227\363\243\242\136\302\131\123\340\317
\344\265\001\073\143\123\050\323\257\146\113\064\071\257\141\016
\076\233\356\263\211\326\223\240\073\001\304\263\043\124\020\074
\115\327\252\260\332\331\154\312\060\104\055\335\262\050\142\212
\101\140\362\100\023\154\260\174\076\101\340\213\246\064\361\347
\256\121\207\003\216\231\177\331\150\242\366\234\015\171\202\262
\237\337\044\310\146\140\350\266\110\104\047\310\153\126\267\104
\205\316\002\267\323\212\161\134\127\121\127\041\214\352\302\121
\017\120\077\200\253\004\115\311\122\335\344\245\362\056\037\155
\165\272\207\035\220\013\356\030\204\200\163\273\213\225\204\212
\141\015\116\135\142\237\343\146\014\373\066\016\047\323\110\370
\006\210\006\245\137\356\176\134\335\255\012\035\075\034\252\100
\171\230\171\270\120\214\066\215\013\012\066\013\325\076\347\135
\201\335\154\334\155\261\157\015\164\236\054\057\302\005\362\104

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\021\262\063\372\201\305\112\155\076\105\326\054\342\153\137\056
\344\103\225\121\033\231\061\005\337\045\033\163\321\173\234\304
\163\111\373\142\140\331\151\143\335\321\076\145\155\107\372\144
\114\003\130\120\331\246\276\345\052\150\353\077\213\020\361\346
\273\042\006\050\232\240\244\230\151\157\066\264\324\015\016\014
\175\300\051\061\273\054\003\047\341\147\247\275\321\213\056\266
\207\304\012\340\011\013\202\241\346\117\130\235\373\330\370\141
\341\312\227\304\270\267\120\071\314\061\116\375\055\034\032\366
\107\343\154\354\033\005\350\177\027\065\020\204\332\063\347\064
\346\265\244\353\304\042\007\112\366\233\130\330\017\234\100\373
\261\213\137\242\375\231\352\242\173\131\142\321\136\256\321\112
\162\030\053\113\066\071\162\007\232\132\360\143\072\317\033\371
\317\335\110\163\131\160\344
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SITHS Root CA v1"

Issuer: CN=SITHS Root CA v1,O=Inera AB,C=SE

Serial Number:90:66:61:a8:62:3d:65:44:77:04:3f:71:9a:c3:97:0c

Subject: CN=SITHS Root CA v1,O=Inera AB,C=SE

Not Valid Before: Thu Mar 29 07:54:49 2012

Not Valid After: Mon Mar 29 07:54:49 2032

Fingerprint (MD5): 7f:7b:02:6c:68:9f:32:03:c7:af:04:9d:ec:23:df:f3

Fingerprint (SHA1): 58:5f:78:75:be:e7:43:3e:b0:79:ea:ab:7d:05:bb:0f:7a:f2:bc:cc

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SITHS Root CA v1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\130\137\170\165\276\347\103\076\260\171\352\253\175\005\273\017
\172\362\274\314
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\177\173\002\154\150\237\062\003\307\257\004\235\354\043\337\363
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\073\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\111\156\145\162\141\040
\101\102\061\031\060\027\006\003\125\004\003\014\020\123\111\124
\110\123\040\122\157\157\164\040\103\101\040\166\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\220\146\141\250\142\075\145\104\167\004\077\161\232

\303\227\014

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate

"Macao Post eSignTrust Root Certification Authority (G02)"

Issuer: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO

Serial Number:52:ac:be:07:11:49:97:bb:1f:bf:87:1b:25:17:bf:a4

Subject: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO

Not Valid Before: Wed Jan 06 00:00:00 2010

Not Valid After: Sun Jan 05 23:59:59 2020

Fingerprint (MD5): a1:2d:ed:eb:8a:3b:88:2f:fa:38:f3:86:a4:fb:bc:f2

Fingerprint (SHA1): 06:14:31:51:e0:2b:45:dd:ba:dd:5d:8e:56:53:0d:aa:e3:28:cf:90

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority (G02)"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061

\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040

\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115

\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124

\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146

\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164

\171\040\050\107\060\062\051

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061

\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040

\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115

\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124

\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146

\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164

\171\040\050\107\060\062\051

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\122\254\276\007\021\111\227\273\037\277\207\033\045\027

\277\244

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\226\060\202\003\176\240\003\002\001\002\002\020\122
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\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\145
\061\013\060\011\006\003\125\004\006\023\002\115\117\061\023\060
\021\006\003\125\004\012\023\012\115\141\143\141\157\040\120\157
\163\164\061\101\060\077\006\003\125\004\003\023\070\115\141\143
\141\157\040\120\157\163\164\040\145\123\151\147\156\124\162\165
\163\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
\050\107\060\062\051\060\036\027\015\061\060\060\061\060\066\060
\060\060\060\060\060\132\027\015\062\060\060\061\060\065\062\063
\065\071\065\071\132\060\145\061\013\060\011\006\003\125\004\006
\023\002\115\117\061\023\060\021\006\003\125\004\012\023\012\115
\141\143\141\157\040\120\157\163\164\061\101\060\077\006\003\125
\004\003\023\070\115\141\143\141\157\040\120\157\163\164\040\145
\123\151\147\156\124\162\165\163\164\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\050\107\060\062\051\060\202\002\042
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\202\002\017\000\060\202\002\012\002\202\002\001\000\266\370\207
\247\164\314\135\043\136\256\253\226\334\327\044\050\035\244\024
\146\327\240\150\214\136\235\105\324\324\051\323\263\013\353\255
\026\352\235\122\021\311\244\341\160\345\335\276\016\034\021\167
\353\237\243\160\170\027\217\271\076\027\123\151\251\353\365\125
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\315\074\343\252\111\321\236\101\067\066\365\141\315\043\017\127
\261\366\115\323\333\015\102\123\002\210\364\360\251\206\213\127
\317\162\012\325\224\113\132\332\067\345\075\107\131\147\276\323
\216\126\325\127\071\320\047\333\237\111\117\250\026\124\277\170
\137\317\034\235\136\241\013\214\203\003\263\014\024\311\132\251
\273\377\306\256\131\317\365\145\037\043\211\001\123\212\325\133
\027\235\233\377\230\121\017\103\111\367\252\054\355\345\351\206
\072\063\120\163\334\122\245\153\143\204\351\023\242\174\307\167
\032\363\252\251\015\013\116\116\035\104\303\162\073\231\131\347
\101\042\073\054\124\136\022\061\226\150\101\031\325\355\165\247
\271\127\133\021\366\232\244\111\057\142\363\013\230\121\033\263
\063\102\322\314\324\141\031\303\323\334\233\373\223\262\142\315
\066\373\214\351\032\156\032\261\071\044\216\135\331\076\073\206
\174\210\346\267\047\003\370\225\121\260\277\120\067\376\370\116
\023\001\033\047\055\233\222\320\162\127\327\243\232\126\350\153
\243\367\125\336\100\135\342\010\037\134\273\121\246\236\264\335
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\101\045\174\252\155\130\126\033\007\264\163\252\037\021\037\074
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\007\366\240\256\123\027\174\137\134\007\034\005\114\253\114\152

\252\302\017\240\031\153\171\171\302\174\263\251\375\075\373\314
\174\161\305\273\276\045\155\041\247\373\326\276\140\363\265\251
\251\154\164\030\077\250\236\102\140\101\362\071\055\035\302\015
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\334\226\065\232\330\046\205\203\266\023\051\302\343\002\003\001
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026
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\057\323\272\037\271\377\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\002\001\000\130\123\213\276\317\101
\262\117\266\325\336\112\150\315\145\317\306\100\212\254\113\232
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\070\110\361\124\214\072\123\153\073\161\065\011\166\145\351\127
\017\103\366\221\232\336\020\273\272\150\222\052\045\313\147\104
\011\153\277\235\227\146\313\251\105\266\276\067\231\035\165\045
\276\075\074\143\154\277\251\023\107\307\162\214\313\303\317\364
\366\207\005\231\211\027\250\064\040\361\337\241\047\147\323\247
\043\357\253\131\203\075\032\330\052\315\302\255\112\060\014\006
\072\040\213\244\370\332\106\067\103\056\264\211\035\204\163\212
\140\276\144\061\047\102\300\353\162\141\155\314\336\174\163\053
\350\277\071\102\136\171\221\354\200\033\252\066\166\116\041\350
\206\004\227\011\050\313\107\347\100\324\054\136\032\136\110\372
\256\307\351\004\352\107\044\233\276\361\107\236\325\325\172\321
\136\324\205\362\013\043\004\230\324\053\232\126\162\106\114\101
\232\063\360\222\264\277\101\324\275\233\260\263\361\365\023\326
\257\133\324\362\321\101\360\107\135\172\274\172\131\361\175\140
\150\224\016\112\117\201\222\042\252\037\304\074\276\034\072\072
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\046\251\160\373\361\211\226\142\025\134\131\240\265\043\372\226
\152\262\032\222\075\015\044\112\053\270\010\376\157\337\334\302
\356\226\377\316\277\173\270\371\204\357\101\073\344\115\271\207
\221\272\306\137\310\355\360\313\213\323\017\221\366\040\336\221
\230\306\347\110\144\321\316\123\022\356\304\025\155\334\200\120
\033\023\140\117\171\133\374\032\234\376\242\237\240\021\063\221
\311\113\155\072\146\226\055\323\070\370\331\231\201\264\104\046
\177\261\347\236\160\155\035\155\365\042\011\344\254\031\066\373
\047\005\330\172\233\331\274\236\033\332\031\067\330\361\335\025
\230\144\033\217\123\360\050\235\254\024\272\137\151\317\226\043
\356\126\254\231\315\072\217\325\136\031\346\142\023\072\137\353
\213\137\026\300\073\341\321\223\217\126\141\067\005\320\171\033
\375\250\274\017\171\322\263\346\323\146

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE


```
# Microsoft Code Signing Only Certificate
# Trust for "Macao Post eSignTrust Root Certification Authority (G02)"
# Issuer: CN=Macao Post eSignTrust Root Certification Authority
(O=Macao Post,C=MO)
# Serial Number:52:ac:be:07:11:49:97:bb:1f:bf:87:1b:25:17:bf:a4
# Subject: CN=Macao Post eSignTrust Root Certification Authority (G02),O=Macao Post,C=MO
# Not Valid Before: Wed Jan 06 00:00:00 2010
# Not Valid After: Sun Jan 05 23:59:59 2020
# Fingerprint (MD5): a1:2d:ed:eb:8a:3b:88:2f:fa:38:f3:86:a4:fb:bc:f2
# Fingerprint (SHA1): 06:14:31:51:e0:2b:45:dd:ba:dd:5d:8e:56:53:0d:aa:e3:28:cf:90
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Macao Post eSignTrust Root Certification Authority (G02)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\024\061\121\340\053\105\335\272\335\135\216\126\123\015\252
\343\050\317\220
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\055\355\353\212\073\210\057\372\070\363\206\244\373\274\362
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\115\117\061
\023\060\021\006\003\125\004\012\023\012\115\141\143\141\157\040
\120\157\163\164\061\101\060\077\006\003\125\004\003\023\070\115
\141\143\141\157\040\120\157\163\164\040\145\123\151\147\156\124
\162\165\163\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\050\107\060\062\051
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\122\254\276\007\021\111\227\273\037\277\207\033\045\027
\277\244
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Autoridade Certificadora Raiz Brasileira v2"
# Issuer: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao -
ITI,O=ICP-Brasil,C=BR
# Serial Number: 1 (0x1)
# Subject: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao -
```

ITI,O=ICP-Brasil,C=BR

#

Not Valid Before: Mon Jun 21 19:04:57 2010

Not Valid After: Wed Jun 21 19:04:57 2023

Fingerprint (MD5): 00:11:ae:73:15:fb:2d:6d:88:d8:43:bd:b4:b6:4c:5f

Fingerprint (SHA1): a9:82:2e:6c:69:33:c6:3c:14:8c:2d:ca:a4:4a:5c:f1:aa:d2:c4:2e

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\062

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\241\060\202\004\211\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122\061
\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102\162
\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064\111
\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156\141

\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141\040
\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055\040
\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101\165
\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146\151
\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141\163
\151\154\145\151\162\141\040\166\062\060\036\027\015\061\060\060
\066\062\061\061\071\060\064\065\067\132\027\015\062\063\060\066
\062\061\061\071\060\064\065\067\132\060\201\227\061\013\060\011
\006\003\125\004\006\023\002\102\122\061\023\060\021\006\003\125
\004\012\023\012\111\103\120\055\102\162\141\163\151\154\061\075
\060\073\006\003\125\004\013\023\064\111\156\163\164\151\164\165
\164\157\040\116\141\143\151\157\156\141\154\040\144\145\040\124
\145\143\156\157\154\157\147\151\141\040\144\141\040\111\156\146
\157\162\155\141\143\141\157\040\055\040\111\124\111\061\064\060
\062\006\003\125\004\003\023\053\101\165\164\157\162\151\144\141
\144\145\040\103\145\162\164\151\146\151\143\141\144\157\162\141
\040\122\141\151\172\040\102\162\141\163\151\154\145\151\162\141
\040\166\062\060\202\002\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002
\202\002\001\000\272\106\244\016\335\347\100\362\265\240\174\122
\225\127\105\374\155\204\363\206\001\311\205\003\255\230\253\322
\362\136\005\231\311\273\157\142\147\375\167\104\271\003\007\074
\322\033\000\142\324\160\054\102\203\171\146\253\231\126\256\201
\274\152\111\275\363\164\017\142\267\353\133\007\146\224\102\044
\235\106\254\232\102\030\060\360\044\250\121\101\352\253\225\361
\250\053\002\170\151\265\051\047\136\234\056\163\306\376\043\245
\343\246\316\375\154\033\153\000\124\353\000\255\117\072\114\074
\347\012\210\133\332\136\232\013\126\344\265\124\070\035\362\012
\223\144\116\303\101\222\123\040\052\317\374\164\156\324\333\063
\070\142\344\376\216\114\130\034\367\217\052\115\377\305\222\331
\011\122\275\317\160\000\235\151\232\063\152\210\207\105\041\231
\026\121\015\064\337\202\275\264\151\250\174\174\324\335\323\362
\025\134\113\305\130\020\352\205\031\313\066\042\130\052\162\014
\232\226\336\312\317\010\121\141\277\264\005\051\006\053\206\220
\376\351\115\303\004\005\107\313\317\166\331\177\161\246\207\173
\025\100\344\063\200\170\007\035\244\362\216\233\100\073\311\162
\120\337\151\276\360\054\226\037\220\265\325\256\164\343\145\264
\214\032\351\152\033\373\162\134\305\202\124\352\340\123\007\304
\314\022\351\367\336\327\057\324\110\057\107\077\046\141\004\261
\022\232\063\153\265\206\113\023\053\320\206\235\107\355\151\373
\374\204\022\146\370\126\345\016\212\154\166\304\153\032\172\302
\240\132\022\321\043\211\130\001\174\010\130\332\025\216\025\331
\176\175\067\266\244\105\365\003\205\314\107\372\213\171\105\270
\146\142\063\323\046\112\336\034\351\324\177\346\155\046\271\074
\175\315\017\050\012\051\017\233\335\143\253\271\246\107\032\204
\327\205\244\003\145\006\004\113\122\215\203\064\102\177\061\216
\021\056\346\263\147\225\100\176\227\172\100\000\371\021\154\203
\070\130\255\003\063\133\246\304\301\305\260\254\015\251\006\360

\246\151\001\064\266\351\370\224\110\117\076\246\165\011\354\112
\305\073\340\311\136\260\062\377\237\151\131\317\074\060\157\015
\316\047\127\354\132\033\150\377\354\117\157\170\062\076\171\305
\264\135\225\177\002\003\001\000\001\243\201\365\060\201\362\060
\116\006\003\125\035\040\004\107\060\105\060\103\006\005\140\114
\001\001\000\060\072\060\070\006\010\053\006\001\005\005\007\002
\001\026\054\150\164\164\160\072\057\057\141\143\162\141\151\172
\056\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142
\162\057\104\120\103\141\143\162\141\151\172\056\160\144\146\060
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060
\206\056\150\164\164\160\072\057\057\141\143\162\141\151\172\056
\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142\162
\057\114\103\122\141\143\162\141\151\172\166\062\056\143\162\154
\060\037\006\003\125\035\043\004\030\060\026\200\024\014\071\040
\072\267\001\037\313\327\050\175\101\240\307\372\112\255\062\044
\276\060\035\006\003\125\035\016\004\026\004\024\014\071\040\072
\267\001\037\313\327\050\175\101\240\307\372\112\255\062\044\276
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\015\006\011\052\206\110\206\367\015\001\001\015\005\000
\003\202\002\001\000\131\232\024\151\030\155\175\051\103\160\175
\166\233\141\337\167\216\032\166\344\251\326\313\166\244\026\014
\114\224\022\306\220\321\201\003\305\255\006\331\055\104\274\262
\011\166\011\200\071\147\000\030\064\155\006\012\346\265\020\131
\110\272\165\140\374\077\216\035\030\125\160\053\236\113\225\254
\211\253\012\167\044\173\141\304\307\221\046\216\106\023\121\067
\266\214\047\012\323\015\360\232\053\042\203\203\263\275\203\065
\255\233\074\274\170\203\051\065\141\066\370\021\161\063\040\124
\143\123\105\001\330\023\132\204\073\327\146\023\044\267\304\106
\305\042\330\163\044\356\034\023\027\226\310\045\350\033\036\317
\337\205\120\155\074\352\367\120\236\033\227\336\247\153\333\326
\163\322\317\174\120\300\260\214\345\123\022\172\206\071\254\065
\133\147\307\352\324\373\321\302\135\352\016\227\163\230\256\051
\277\344\072\363\004\066\120\054\355\336\036\333\205\350\035\204
\011\356\363\246\203\063\133\157\107\171\117\110\265\374\270\046
\023\253\252\263\364\141\021\373\105\147\363\035\076\156\376\052
\113\046\104\032\237\261\242\340\074\332\340\344\005\072\170\254
\373\250\241\115\277\135\054\167\051\220\315\023\035\357\006\050
\330\267\024\363\133\310\311\236\247\176\061\022\212\170\142\304
\321\005\274\006\002\143\004\053\015\211\335\344\134\133\062\200
\104\324\102\354\052\363\362\100\207\061\325\076\342\012\062\014
\024\215\325\162\155\013\346\375\215\344\250\363\005\215\165\027
\167\233\012\271\372\220\222\231\145\210\062\147\103\005\216\055
\013\025\273\065\361\141\350\331\147\167\355\026\345\350\001\055
\153\064\077\216\203\263\367\352\017\112\036\076\065\204\235\214
\200\064\077\251\225\350\303\255\304\315\236\312\024\026\054\031
\236\344\066\213\271\271\243\102\045\007\076\303\345\325\150\117
\240\146\034\246\263\266\163\034\220\032\077\100\271\032\126\102

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\160\207\377\157\055\017\021\375\036\377\367\205\060\025\016\343
\027\061\356\047\225\314\311\351\231\036\227\307\155\133\007\265
\005\152\075\362\105\337\272\202\171\044\160\056\233\202\037\146
\251\245\155\047\314\366\052\242\321\137\205\157\340\106\235\252
\322\245\116\125\016
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

#

Trust for "Autoridade Certificadora Raiz Brasileira v2"

Issuer: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

Serial Number: 1 (0x1)

Subject: CN=Autoridade Certificadora Raiz Brasileira v2,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

Not Valid Before: Mon Jun 21 19:04:57 2010

Not Valid After: Wed Jun 21 19:04:57 2023

Fingerprint (MD5): 00:11:ae:73:15:fb:2d:6d:88:d8:43:bd:b4:b6:4c:5f

Fingerprint (SHA1): a9:82:2e:6c:69:33:c6:3c:14:8c:2d:ca:a4:4a:5c:f1:aa:d2:c4:2e

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\251\202\056\154\151\063\306\074\024\214\055\312\244\112\134\361
\252\322\304\056
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\000\021\256\163\025\373\055\155\210\330\103\275\264\266\114\137
```

END

CKA_ISSUER

MULTILINE_OCTAL

```
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\062
```

END

```

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Swisscom
  Root CA 2"
# Issuer: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Serial Number: 1e:9e:28:e8:f2:e5:ef:c3:7c:4a:1e:5a:18:67:b6
# Subject: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Not Valid Before: Fri Jun 24 08:38:14 2011
# Not Valid After: Wed Jun 25 07:38:14 2031
# Fingerprint (MD5): 5b:04:69:ec:a5:83:94:63:18:a7:86:d0:e4:f2:6e:19
# Fingerprint (SHA1): 77:47:4f:c6:30:e4:0f:4c:47:64:3f:84:ba:b8:c6:95:4a:8a:41:ec
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_ID
  UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\036\236\050\350\110\362\345\357\303\174\112\036\132\030
\147\266
END

```

CKA_VALUE MULTILINE_OCTAL

\060\202\005\331\060\202\003\301\240\003\002\001\002\002\020\036
\236\050\350\110\362\345\357\303\174\112\036\132\030\147\266\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\144
\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021\060
\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157\155
\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151\164
\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040\123
\145\162\166\151\143\145\163\061\033\060\031\006\003\125\004\003
\023\022\123\167\151\163\163\143\157\155\040\122\157\157\164\040
\103\101\040\062\060\036\027\015\061\061\060\066\062\064\060\070
\063\070\061\064\132\027\015\063\061\060\066\062\065\060\067\063
\070\061\064\132\060\144\061\013\060\011\006\003\125\004\006\023
\002\143\150\061\021\060\017\006\003\125\004\012\023\010\123\167
\151\163\163\143\157\155\061\045\060\043\006\003\125\004\013\023
\034\104\151\147\151\164\141\154\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163\061\033\060
\031\006\003\125\004\003\023\022\123\167\151\163\163\143\157\155
\040\122\157\157\164\040\103\101\040\062\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\225\102\116\204\235
\121\346\323\011\350\162\132\043\151\333\170\160\216\026\361\053
\217\015\003\316\223\314\056\000\010\173\253\063\214\364\351\100
\346\027\114\253\236\270\107\024\062\167\062\335\050\014\336\030
\113\137\166\237\370\071\073\374\116\211\330\174\305\147\357\253
\322\271\064\137\153\072\363\144\066\316\302\260\317\023\150\312
\310\313\353\265\342\075\056\041\337\352\054\324\340\371\160\226
\114\377\152\130\230\267\027\344\033\122\345\176\007\000\035\137
\332\346\076\225\004\267\151\210\071\241\101\140\045\141\113\225
\071\150\142\034\261\013\005\211\300\066\202\024\041\077\256\333
\241\375\274\157\034\140\206\266\123\224\111\271\053\106\305\117
\000\053\277\241\273\313\077\340\307\127\034\127\350\326\151\370
\301\044\122\235\210\125\335\302\207\056\164\043\320\024\375\052
\107\132\273\246\235\375\224\344\321\212\245\137\206\143\166\205
\313\257\377\111\050\374\200\355\114\171\322\273\344\300\357\001
\356\120\101\010\065\043\160\053\251\026\264\214\156\205\351\266
\021\317\061\335\123\046\033\337\055\132\112\002\100\374\304\300
\266\351\061\032\010\050\345\140\303\037\304\220\216\020\142\140
\104\015\354\012\276\125\030\161\054\245\364\262\274\025\142\377
\034\343\276\035\332\036\127\263\074\176\315\202\035\221\343\113
\353\054\122\064\260\212\375\022\116\226\260\353\160\177\236\071
\367\146\102\261\253\254\122\332\166\100\127\173\052\275\350\156
\003\262\013\200\205\210\235\014\307\302\167\260\232\232\127\364
\270\372\023\134\150\223\072\147\244\227\320\033\231\267\206\062
\113\140\330\316\357\320\014\177\225\237\157\207\117\207\212\216
\137\010\174\252\133\374\132\276\241\221\237\125\175\116\260\013
\151\314\260\224\250\247\207\362\323\112\120\334\137\162\260\026
\165\036\313\264\030\142\232\260\247\071\252\233\237\146\330\215

\246\154\226\025\343\346\362\370\361\203\142\154\273\125\351\141
\223\243\075\365\261\127\213\117\043\260\233\345\224\152\057\337
\214\337\225\121\051\140\241\013\051\344\134\125\130\267\250\374
\231\356\045\115\114\016\263\323\114\217\204\350\051\017\375\020
\124\002\205\310\371\345\303\213\317\347\017\002\003\001\000\001
\243\201\206\060\201\203\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\035\006\003\125\035\041\004\026\060
\024\060\022\006\007\140\205\164\001\123\002\001\006\007\140\205
\164\001\123\002\001\060\022\006\003\125\035\023\001\001\377\004
\010\060\006\001\001\377\002\001\007\060\035\006\003\125\035\016
\004\026\004\024\115\046\040\042\211\113\323\325\244\012\241\157
\336\342\022\201\305\361\074\056\060\037\006\003\125\035\043\004
\030\060\026\200\024\115\046\040\042\211\113\323\325\244\012\241
\157\336\342\022\201\305\361\074\056\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\003\202\002\001\000\062\012\262
\244\033\313\175\276\202\127\211\271\152\177\363\364\301\056\021
\175\270\031\076\171\267\250\250\162\067\146\233\032\355\254\023
\073\016\277\142\360\234\337\236\173\241\123\110\016\101\172\312
\040\247\027\033\266\170\354\100\221\363\102\255\020\303\134\357
\377\140\131\177\315\205\243\213\075\110\034\045\002\074\147\175
\365\062\351\057\060\345\175\245\172\070\320\363\146\052\146\036
\215\063\203\212\157\174\156\250\132\165\232\270\327\332\130\110
\104\107\250\114\372\114\111\012\112\302\022\067\250\100\014\303
\310\341\320\127\015\227\062\225\307\072\237\227\323\127\370\013
\336\345\162\363\243\333\377\265\330\131\262\163\335\115\052\161
\262\272\111\365\313\034\325\365\171\310\231\263\374\301\114\164
\343\264\275\051\067\025\004\050\036\336\105\106\160\354\257\272
\170\016\212\052\316\000\171\334\300\137\031\147\054\153\113\357
\150\150\013\103\343\254\301\142\011\357\246\335\145\141\240\257
\204\125\110\221\122\034\306\045\221\052\320\301\042\043\141\131
\257\105\021\205\035\001\044\064\217\317\263\377\027\162\040\023
\302\200\252\041\054\161\071\016\320\217\134\301\323\321\216\042
\162\106\114\035\226\256\117\161\261\341\005\051\226\131\364\273
\236\165\075\317\015\067\015\142\333\046\214\143\251\043\337\147
\006\074\174\072\332\064\102\341\146\264\106\004\336\306\226\230
\017\113\110\172\044\062\165\221\237\254\367\150\351\052\271\125
\145\316\135\141\323\047\160\330\067\376\237\271\257\240\056\126
\267\243\145\121\355\073\253\024\277\114\121\003\350\137\212\005
\233\356\212\156\234\357\277\150\372\310\332\013\343\102\311\320
\027\024\234\267\112\340\257\223\047\041\125\046\265\144\057\215
\361\377\246\100\005\205\005\134\312\007\031\134\013\023\050\114
\130\177\302\245\357\105\332\140\323\256\145\141\235\123\203\164
\302\256\362\134\302\026\355\222\076\204\076\163\140\210\274\166
\364\054\317\320\175\175\323\270\136\321\221\022\020\351\315\335
\312\045\343\325\355\231\057\276\165\201\113\044\371\105\106\224
\311\051\041\123\234\046\105\252\023\027\344\347\315\170\342\071
\301\053\022\236\246\236\033\305\346\016\331\061\331

END


```

CKA_NSS_Mozilla_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft
Code Signing Only Certificate
# Trust for "Swisscom Root CA 2"
# Issuer: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Serial Number: 1e:9e:28:e8:48:f2:e5:ef:c3:7c:4a:1e:5a:18:67:b6
# Subject: CN=Swisscom Root CA 2,OU=Digital Certificate Services,O=Swisscom,C=ch
# Not Valid Before: Fri Jun 24 08:38:14 2011
# Not Valid After: Wed Jun 25 07:38:14 2031
# Fingerprint (MD5): 5b:04:69:ec:a5:83:94:63:18:a7:86:d0:e4:f2:6e:19
# Fingerprint (SHA1): 77:47:4f:c6:30:e4:0f:4c:47:64:3f:84:ba:b8:c6:95:4a:8a:41:ec
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swisscom Root CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\167\107\117\306\060\344\017\114\107\144\077\204\272\270\306\225
\112\212\101\354
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\133\004\151\354\245\203\224\143\030\247\206\320\344\362\156\031
END
CKA_ISSUER MULTILINE_OCTAL
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\036\236\050\350\110\362\345\357\303\174\112\036\132\030
\147\266
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "IGC/A AC racine Etat francais"

```

```
# Issuer: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR
# Serial Number:11:21:85:0c:b3:9c:6a:32:fa:be:67:1b:81:3f:a4:86:15:8f
# Subject: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR
#
  Not Valid Before: Fri Jul 08 09:00:00 2011
  Not Valid After: Sat Apr 15 09:00:00 2028
  Fingerprint (MD5): f4:f5:81:33:de:2e:15:b5:70:3a:57:3c:26:0a:72:8d
  Fingerprint (SHA1): 1a:c9:2f:09:ea:89:e2:8b:12:6d:fa:c5:1e:3a:f7:ea:90:95:a3:ee
  CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
  CKA_TOKEN CK_BBOOL CK_TRUE
  CKA_PRIVATE CK_BBOOL CK_FALSE
  CKA_MODIFIABLE CK_BBOOL CK_FALSE
  CKA_LABEL UTF8 "IGC/A AC racine Etat francais"
  CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
  CKA_SUBJECT MULTILINE_OCTAL
  \060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
  \016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
  \027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
  \063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
  \003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
  \156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
  END
  CKA_ID UTF8 "0"
  CKA_ISSUER MULTILINE_OCTAL
  \060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
  \016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
  \027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
  \063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
  \003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
  \156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
  END
  CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
  \002\022\021\041\205\014\263\234\152\062\372\276\147\033\201\077
  \244\206\025\217
  END
  CKA_VALUE MULTILINE_OCTAL
  \060\202\005\303\060\202\003\253\240\003\002\001\002\002\022\021
  \041\205\014\263\234\152\062\372\276\147\033\201\077\244\206\025
  \217\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
  \060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
  \016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
  \027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
  \063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
  \003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
  \156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
  \060\036\027\015\061\061\060\067\060\070\060\071\060\060\060\060
  \132\027\015\062\070\060\064\061\065\060\071\060\060\060\060\132
```

\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\252\174\050\237\021\060\230\315\157\156\054\205\022\046\073
\010\006\312\101\375\122\117\103\275\300\046\047\161\166\032\131
\226\330\011\353\007\252\046\116\117\076\113\241\343\227\207\205
\146\201\161\311\271\025\166\157\167\120\030\223\020\055\067\210
\115\027\267\363\105\275\042\056\267\047\230\133\307\005\375\275
\063\355\242\365\123\035\050\043\145\277\100\065\156\316\152\013
\303\251\365\045\014\253\042\360\270\300\304\175\067\014\243\142
\174\356\264\333\075\041\071\247\234\211\343\233\242\020\370\212
\266\112\057\056\230\151\053\152\240\206\332\361\010\345\276\114
\147\026\055\045\141\363\325\015\013\027\104\107\011\324\106\005
\235\017\300\210\115\141\344\044\304\307\150\011\257\254\322\257
\271\225\046\157\200\004\374\166\254\252\307\043\266\344\006\221
\125\104\354\144\333\231\201\034\322\126\164\375\326\062\050\273
\313\311\067\015\373\151\154\157\272\243\153\006\214\152\100\056
\027\072\071\352\320\014\337\132\034\272\157\244\062\260\270\314
\076\167\033\323\213\037\206\372\377\076\076\157\134\210\106\347
\343\017\372\253\035\363\175\113\370\124\156\116\314\334\062\132
\143\170\242\062\257\063\170\352\103\341\114\172\115\327\224\006
\055\346\117\245\102\222\257\050\212\117\303\025\354\251\153\251
\337\340\335\023\002\274\314\175\377\055\346\007\251\276\165\226
\352\102\136\133\032\336\242\063\263\143\275\253\005\371\213\346
\275\115\321\155\126\232\353\211\074\237\300\170\344\276\045\160
\006\305\021\163\240\310\312\024\313\072\324\362\234\052\074\332
\137\027\063\331\166\024\067\252\111\207\145\331\364\331\056\031
\137\371\240\315\250\271\101\062\155\161\246\244\313\367\143\042
\320\051\344\272\201\032\152\051\035\232\245\244\134\106\124\044
\105\324\310\355\172\171\205\354\204\167\156\147\115\144\017\103
\336\172\203\244\247\330\333\265\123\114\376\142\310\023\303\142
\066\245\050\061\062\233\264\226\207\342\231\306\037\126\277\106
\243\251\144\061\345\325\261\113\250\146\314\133\241\377\026\374
\012\070\052\150\217\167\045\046\255\221\164\205\150\310\177\032
\345\132\024\270\175\016\267\043\061\300\144\267\005\057\101\130
\125\002\003\001\000\001\243\173\060\171\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\026\006\003\125
\035\040\004\017\060\015\060\013\006\011\052\201\172\001\201\137
\001\001\002\060\035\006\003\125\035\016\004\026\004\024\237\252
\323\051\226\337\000\345\103\340\361\143\254\336\022\216\302\047
\170\372\060\037\006\003\125\035\043\004\030\060\026\200\024\237
\252\323\051\226\337\000\345\103\340\361\143\254\336\022\216\302

\047\170\372\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\002\001\000\165\265\165\321\216\066\146\234\110
\367\205\015\116\005\273\115\232\234\264\016\050\242\004\274\120
\060\273\364\224\114\230\220\205\253\340\122\144\117\322\322\056
\142\223\220\260\205\015\210\124\373\306\124\154\236\353\225\171
\200\136\242\227\026\037\362\147\164\101\234\125\364\267\152\233
\112\026\206\275\005\037\146\200\160\176\311\321\365\055\041\161
\120\071\245\255\210\246\046\034\213\327\045\034\072\326\343\364
\302\014\237\127\301\144\310\127\121\043\026\043\215\017\043\152
\126\113\377\372\306\237\065\223\306\042\300\145\361\257\336\251
\154\030\276\127\145\131\315\364\043\125\144\041\330\355\225\141
\151\063\162\152\121\366\237\345\225\155\216\336\153\163\047\023
\224\136\176\227\110\300\062\026\276\075\067\355\326\334\216\274
\134\055\374\142\250\317\366\220\367\261\213\011\353\072\044\143
\015\310\226\105\324\057\167\110\102\365\055\142\347\047\013\340
\021\206\031\335\247\020\367\143\006\221\060\151\132\165\364\254
\371\241\215\227\306\240\357\072\037\223\045\110\126\072\032\210
\041\031\223\303\225\040\111\010\125\111\115\242\123\234\231\234
\163\151\056\247\365\312\267\016\045\357\067\043\137\220\330\103
\176\356\204\027\152\047\136\177\322\055\077\254\076\257\060\247
\215\221\304\364\217\011\035\363\367\221\016\343\030\272\334\104
\311\175\005\123\003\267\156\240\363\171\327\321\032\117\320\270
\154\210\166\301\200\230\125\205\123\141\317\104\127\114\336\116
\015\026\121\361\075\211\201\256\175\013\255\212\265\356\126\304
\306\314\021\013\030\324\374\375\171\373\376\004\021\234\043\357
\166\162\307\215\276\271\036\170\166\362\232\034\255\143\102\307
\330\355\155\141\220\302\041\052\017\010\024\055\040\103\045\174
\030\265\267\240\244\175\271\245\014\031\376\311\253\075\347\133
\336\257\372\127\031\047\205\347\043\016\364\315\015\031\060\076
\212\344\306\021\036\360\264\175\151\143\233\016\226\206\220\340
\373\003\157\133\131\076\035\041\365\127\147\126\046\362\207\031
\007\204\272\054\220\072\303\050\244\005\132\040\315\251\133\225
\165\071\177\042\120\012\116\177\027\367\263\254\323\007\246\276
\055\122\012\060\114\170\020

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "IGC/A AC racine Etat francais"

Issuer: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR

Serial Number: 11:21:85:0c:b3:9c:6a:32:fa:be:67:1b:81:3f:a4:86:15:8f

Subject: CN=IGC/A AC racine Etat francais,OU=0002 130007669,O=ANSSI,C=FR

Not Valid Before: Fri Jul 08 09:00:00 2011

Not Valid After:

Sat Apr 15 09:00:00 2028

Fingerprint (MD5): f4:f5:81:33:de:2e:15:b5:70:3a:57:3c:26:0a:72:8d

Fingerprint (SHA1): 1a:c9:2f:09:ea:89:e2:8b:12:6d:fa:c5:1e:3a:f7:ea:90:95:a3:ee

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "IGC/A AC racine Etat francais"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\032\311\057\011\352\211\342\213\022\155\372\305\036\072\367\352
\220\225\243\356

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\364\365\201\063\336\056\025\265\160\072\127\074\046\012\162\215

END

CKA_ISSUER MULTILINE_OCTAL

\060\136\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\016\060\014\006\003\125\004\012\023\005\101\116\123\123\111\061
\027\060\025\006\003\125\004\013\023\016\060\060\060\062\040\061
\063\060\060\060\067\066\066\071\061\046\060\044\006\003\125\004
\003\023\035\111\107\103\057\101\040\101\103\040\162\141\143\151
\156\145\040\105\164\141\164\040\146\162\141\156\143\141\151\163

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\022\021\041\205\014\263\234\152\062\372\276\147\033\201\077
\244\206\025\217

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "PersonalID Trustworthy RootCA 2011"

Issuer: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

Serial Number:58:cb:f9:64:96:71:74:95:40:f4:ad:08:ac:64:e4:e3

Subject: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

Not Valid Before: Thu Sep 01 08:35:21 2011

Not Valid After: Sun Sep 01 08:45:16 2041

Fingerprint (MD5): 20:3c:23:dc:f6:7a:97:14:0e:5f:48:b4:7d:ad:ac:c8

Fingerprint (SHA1): 43:94:ce:31:26:ff:1a:22:4c:dd:4d:ee:b4:f4:ec:1d:a3:68:ef:6a

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "PersonalID Trustworthy RootCA 2011"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101
\040\062\060\061\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101
\040\062\060\061\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\130\313\371\144\226\161\164\225\100\364\255\010\254\144
\344\343

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\062\060\202\004\032\240\003\002\001\002\002\020\130
\313\371\144\226\161\164\225\100\364\255\010\254\144\344\343\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\163
\061\013\060\011\006\003\125\004\006\023\002\111\114\061\030\060
\026\006\003\125\004\012\014\017\120\145\162\163\157\156\141\154
\111\104\040\114\164\144\056\061\035\060\033\006\003\125\004\013
\014\024\103\145\162\164\151\146\151\143\141\164\145\040\123\145
\162\166\151\143\145\163\061\053\060\051\006\003\125\004\003\014
\042\120\145\162\163\157\156\141\154\111\104\040\124\162\165\163
\164\167\157\162\164\150\171\040\122\157\157\164\103\101\040\062
\060\061\061\060\036\027\015\061\061\060\071\060\061\060\070\063
\065\062\061\132\027\015\064\061\060\071\060\061\060\070\064\065
\061\066\132\060\163\061\013\060\011\006\003\125\004\006\023\002
\111\114\061\030\060\026\006\003\125\004\012\014\017\120\145\162
\163\157\156\141\154\111\104\040\114\164\144\056\061\035\060\033
\006\003\125\004\013\014\024\103\145\162\164\151\146\151\143\141
\164\145\040\123\145\162\166\151\143\145\163\061\053\060\051\006
\003\125\004\003\014\042\120\145\162\163\157\156\141\154\111\104
\040\124\162\165\163\164\167\157\162\164\150\171\040\122\157\157
\164\103\101\040\062\060\061\061\060\202\002\042\060\015\006\011

\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\260\225\214\140\376\005\016
\152\063\355\367\213\343\362\325\362\174\323\126\102\124\367\053
\362\210\245\365\347\267\154\207\001\053\151\276\005\111\104\330
\333\041\172\052\327\212\061\241\041\020\236\323\342\156\143\202
\205\124\204\115\050\046\033\342\023\367\121\373\057\353\022\325
\075\071\214\144\237\244\023\207\303\330\311\372\051\043\216\011
\217\111\106\304\324\311\127\130\151\237\027\317\163\164\245\356
\312\030\271\307\301\060\315\117\072\065\010\123\370\354\032\373
\157\060\355\366\237\011\360\360\320\304\216\073\171\116\056\205
\042\134\324\175\160\321\377\222\272\037\324\125\123\147\272\050
\130\055\367\023\214\374\245\013\234\070\246\106\034\016\350\252
\170\053\365\012\060\323\073\140\206\310\177\245\233\242\143\001
\057\320\323\022\045\205\176\226\315\061\261\344\233\216\352\054
\223\244\142\250\067\325\366\217\337\041\232\323\076\035\341\120
\021\160\124\233\004\027\235\115\253\141\316\217\052\054\357\171
\346\167\105\131\326\150\325\266\113\232\253\221\113\016\141\027
\271\130\302\236\146\241\217\211\301\103\040\102\260\177\200\234
\112\052\267\172\040\101\306\115\304\222\157\172\176\135\133\271
\243\311\116\312\345\120\145\274\000\000\171\107\360\105\004\260
\042\373\016\230\252\141\035\117\140\143\162\217\265\260\004\224
\177\020\254\031\077\047\142\151\326\034\127\335\071\117\070\352
\000\232\375\050\235\100\046\300\100\235\304\240\111\310\101\265
\147\075\240\113\224\051\022\251\130\047\131\004\177\217\321\214
\176\014\263\010\027\064\254\217\271\134\275\351\160\241\176\302
\245\145\141\351\266\020\120\217\334\344\164\141\361\137\162\173
\177\134\057\055\174\253\326\103\061\020\034\131\167\312\110\112
\030\242\144\013\000\131\147\307\324\312\303\233\032\010\122\025
\276\327\305\306\267\057\346\142\234\246\307\330\336\360\025\373
\256\071\125\055\157\120\165\056\375\240\007\264\137\172\176\004
\213\366\231\242\165\355\311\073\325\075\317\147\122\075\076\357
\037\160\232\030\074\247\040\006\111\014\261\145\254\063\273\324
\177\107\151\210\366\212\201\356\235\324\264\307\057\003\350\256
\032\311\126\005\147\151\250\310\201\002\003\001\000\001\243\201
\301\060\201\276\060\013\006\003\125\035\017\004\004\003\002\001
\206\060\022\006\003\125\035\023\001\001\377\004\010\060\006\001
\001\377\002\001\002\060\035\006\003\125\035\016\004\026\004\024
\307\177\013\310\057\127\216\051\362\366\001\213\353\047\245\126
\216\375\244\036\060\020\006\011\053\006\001\004\001\202\067\025
\001\004\003\002\001\000\060\152\006\003\125\035\040\004\143\060
\141\060\137\006\010\053\006\001\004\001\341\030\001\060\123\060
\121\006\010\053\006\001\005\005\007\002\001\026\105\150\164\164
\160\072\057\057\167\167\167\056\151\143\141\056\143\157\056\151
\154\057\162\145\160\157\163\151\164\157\162\171\057\143\160\163
\057\120\145\162\163\157\156\141\154\111\104\137\120\162\141\143
\164\151\143\145\137\123\164\141\164\145\155\145\156\164\056\160
\144\146\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\003\202\002\001\000\102\145\213\044\372\222\025\064\032\034

\372\310\316\115\172\057\173\337\320\003\101\034\324\244\341\373
\350\314\255\011\335\035\244\010\331\250\040\175\227\237\014\111
\361\245\302\346\325\167\106\227\176\244\220\242\171\351\275\032
\136\064\202\146\011\122\374\120\321\217\320\253\034\242\377\377
\075\356\376\043\370\277\043\263\315\276\341\367\317\344\330\022
\343\224\310\116\314\327\173\260\067\233\167\352\355\134\201\310
\314\217\316\071\343\344\145\135\336\202\330\217\043\151\341\121
\257\137\267\117\220\151\244\231\145\123\272\346\375\257\170\147
\224\112\310\303\177\214\002\117\112\346\207\230\366\070\267\110
\370\155\050\177\367\306\154\045\124\375\056\326\352\332\006\342
\261\375\007\150\360\257\200\214\264\302\351\164\025\244\032\277
\271\312\103\133\022\347\205\107\136\122\003\360\221\340\351\120
\161\324\041\002\054\173\206\221\160\066\306\234\266\164\371\052
\125\367\041\373\157\240\006\135\327\060\022\362\121\361\311\070
\066\217\310\146\141\101\331\307\113\202\150\122\243\365\211\014
\025\274\116\052\225\254\061\151\247\033\342\324\327\110\364\221
\365\003\174\171\026\076\054\015\151\341\212\067\036\237\174\030
\125\101\057\137\347\244\162\233\125\363\343\001\260\002\245\204
\022\152\100\246\253\344\241\254\353\003\331\274\137\044\126\047
\255\040\340\146\065\105\075\107\011\360\005\261\157\161\176\100
\260\320\025\136\053\254\122\201\250\373\203\365\054\127\104\206
\064\344\024\152\343\317\175\232\167\330\154\110\134\313\232\341
\246\373\277\021\242\006\345\037\161\275\064\265\317\275\304\102
\026\305\051\370\324\300\114\212\262\336\305\224\202\206\233\314
\340\251\006\104\061\044\044\115\372\355\341\102\045\146\242\301
\327\200\027\357\172\225\145\103\076\146\323\005\361\001\344\102
\126\104\000\170\153\235\066\040\373\145\377\100\134\350\150\065
\037\341\046\240\202\003\166\003\313\160\106\021\044\256\337\057
\140\375\361\047\000\003\275\113\047\333\274\234\227\067\121\053
\345\170\264\301\066\220\020\214\377\075\000\324\272\110\237\110
\312\207\061\232\355\304\232\123\322\335\163\024\077\011\202\241
\135\145\116\115\046\342

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "PersonalID

Trustworthy RootCA 2011"

Issuer: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

Serial Number:58:cb:f9:64:96:71:74:95:40:f4:ad:08:ac:64:e4:e3

Subject: CN=PersonalID Trustworthy RootCA 2011,OU=Certificate Services,O=PersonalID Ltd.,C=IL

Not Valid Before: Thu Sep 01 08:35:21 2011

Not Valid After: Sun Sep 01 08:45:16 2041

Fingerprint (MD5): 20:3c:23:dc:f6:7a:97:14:0e:5f:48:b4:7d:ad:ac:c8

Fingerprint (SHA1): 43:94:ce:31:26:ff:1a:22:4c:dd:4d:ee:b4:f4:ec:1d:a3:68:ef:6a


```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "PersonalID Trustworthy RootCA 2011"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\103\224\316\061\046\377\032\042\114\335\115\356\264\364\354\035
\243\150\357\152
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\040\074\043\334\366\172\227\024\016\137\110\264\175\255\254\310
END
CKA_ISSUER MULTILINE_OCTAL
\060\163\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\030\060\026\006\003\125\004\012\014\017\120\145\162\163\157\156
\141\154\111\104\040\114\164\144\056\061\035\060\033\006\003\125
\004\013\014\024\103\145\162\164\151\146\151\143\141\164\145\040
\123\145\162\166\151\143\145\163\061\053\060\051\006\003\125\004
\003\014\042\120\145\162\163\157\156\141\154\111\104\040\124\162
\165\163\164\167\157\162\164\150\171\040\122\157\157\164\103\101
\040\062\060\061\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\130\313\371\144\226\161\164\225\100\364\255\010\254\144
\344\343
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Swiss Government Root CA II"
# Issuer: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal Authorities
of the Swiss Confederation,C=CH
#
Serial Number:0e:9f:17:99:a5:b1:3d:9c:cb:ec:06:eb:a3:f0:0e:69
# Subject: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal
Authorities of the Swiss Confederation,C=CH
# Not Valid Before: Wed Feb 16 09:00:00 2011
# Not Valid After: Fri Feb 16 08:59:59 2035
# Fingerprint (MD5): 30:b0:e4:cf:bf:f5:89:dc:bf:52:2d:88:1c:cb:aa:b3
# Fingerprint (SHA1): c7:f7:cb:e2:02:36:66:f9:86:02:5d:4a:3e:31:3f:29:eb:0c:5b:38
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

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CKA_LABEL UTF8 "Swiss Government Root CA II"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\044\060\042\006\003\125\004\003\023\033\123
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040
\122\157\157\164\040\103\101\040\111\111
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\044\060\042\006\003\125\004\003\023\033\123
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040
\122\157\157\164\040\103\101\040\111\111
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\016\237\027\231\245\261\075\234\313\354\006\353\243\360
\016\151
END
CKA_VALUE MULTILINE_OCTAL
\060\202\010\070\060\202\006\040\240\003\002\001\002\002\020\016
\237\027\231\245\261\075\234\313\354\006\353\243\360\016\151\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\247\061\013\060\011\006\003\125\004\006\023\002\103\110\061\073
\060\071\006\003\125\004\012\023\062\124\150\145\040\106\145\144
\145\162\141\154\040\101\165\164\150\157\162\151\164\151\145\163
\040\157\146\040\164\150\145\040\123\167\151\163\163\040\103\157
\156\146\145\144\145\162\141\164\151\157\156\061\021\060\017\006
\003\125\004\013\023\010\123\145\162\166\151\143\145\163\061\042
\060\040\006\003\125\004\013\023\031\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\151
\145\163\061\044\060\042\006\003\125\004\003\023\033\123\167\151
```

\163\163\040\107\157\166\145\162\156\155\145\156\164\040\122\157
\157\164\040\103\101\040\111\111\060\036\027\015\061\061\060\062
\061\066\060\071\060\060\060\060\132\027\015\063\065\060\062\061
\066\060\070\065\071\065\071\132\060\201\247\061\013\060\011\006
\003\125\004\006\023\002\103\110\061\073\060\071\006\003\125\004
\012\023\062\124\150\145\040\106\145\144\145\162\141\154\040\101
\165\164\150\157\162\151\164\151\145\163\040\157\146\040\164\150
\145\040\123\167\151\163\163\040\103\157\156\146\145\144\145\162
\141\164\151\157\156\061\021\060\017\006\003\125\004\013\023\010
\123\145\162\166\151\143\145\163\061\042\060\040\006\003\125\004
\013\023\031\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\151\145\163\061\044\060\042
\006\003\125\004\003\023\033\123\167\151\163\163\040\107\157\166
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040
\111\111\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\251\054\022\355\277\300\042\351\206\350\034\067\202
\203\233\150\005\157\026\343\210\250\001\017\313\161\236\177\107
\220\113\314\045\167\310\360\327\151\056\221\150\127\041\262\262
\007\041\063\356\114\244\067\045\230\114\264\106\062\116\326\371
\153\213\121\212\357\054\067\362\230\325\365\324\264\267\347\000
\312\357\301\023\136\224\253\156\273\234\275\372\153\217\253\370
\036\066\126\151\070\146\072\320\364\063\015\000\071\002\250\305
\034\013\041\267\134\040\014\141\320\255\256\316\216\136\331\072
\351\336\377\107\174\170\127\016\034\161\364\140\034\335\333\232
\030\051\257\331\200\243\237\205\204\143\063\221\357\275\164\356
\335\003\172\310\372\340\204\346\331\275\116\176\372\156\117\166
\321\135\076\250\350\207\105\220\171\363\255\256\365\302\135\021
\115\051\367\210\023\311\325\223\163\001\253\335\355\375\257\167
\373\151\116\357\217\122\034\317\365\054\132\154\354\376\202\233
\333\174\071\253\165\043\176\070\220\117\224\216\055\142\130\236
\367\347\162\374\224\133\162\126\305\235\243\256\253\265\266\300
\327\166\120\000\074\077\107\210\222\132\140\324\277\062\033\246
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CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code

Signing Only Certificate

Trust for "Swiss Government Root CA II"

Issuer: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal Authorities
of the Swiss Confederation,C=CH

Serial Number:0e:9f:17:99:a5:b1:3d:9c:cb:ec:06:eb:a3:f0:0e:69

Subject: CN=Swiss Government Root CA II,OU=Certification Authorities,OU=Services,O=The Federal
Authorities of the Swiss Confederation,C=CH

Not Valid Before: Wed Feb 16 09:00:00 2011

Not Valid After: Fri Feb 16 08:59:59 2035

Fingerprint (MD5): 30:b0:e4:cf:bf:f5:89:dc:bf:52:2d:88:1c:cb:aa:b3

Fingerprint (SHA1): c7:f7:cb:e2:02:36:66:f9:86:02:5d:4a:3e:31:3f:29:eb:0c:5b:38

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swiss Government Root CA II"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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END

CKA_ISSUER

MULTILINE_OCTAL

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CKA_SERIAL_NUMBER MULTILINE_OCTAL

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CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Swiss Government Root CA I"

Issuer: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal Authorities of the Swiss Confederation,C=CH

Serial Number:fd:75:04:8d:7a:60:86:93:69:4c:aa:00:3c:65:d3:3d

Subject: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal Authorities of the Swiss Confederation,C=CH

Not Valid Before: Tue Feb 15 09:00:00 2011

Not Valid After: Thu Feb 15 08:59:59 2035

Fingerprint (MD5): c7:c9:da:9b:76:e1:ac:86:6b:34:bd:03:3f:e3:cf:d2

Fingerprint (SHA1): a1:58:51:87:15:65:86:ce:f9:c4:54:e2:2a:b1:5c:58:74:56:07:b4

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swiss Government Root CA I"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT

MULTILINE_OCTAL

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CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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MULTILINE_OCTAL

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CKA_VALUE MULTILINE_OCTAL

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\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\201
\343\006\003\125\035\043\004\201\333\060\201\330\200\024\265\033
\203\273\073\117\262\322\373\345\003\216\324\141\135\321\032\216
\260\242\241\201\254\244\201\251\060\201\246\061\013\060\011\006
\003\125\004\006\023\002\103\110\061\073\060\071\006\003\125\004
\012\023\062\124\150\145\040\106\145\144\145\162\141\154\040\101
\165\164\150\157\162\151\164\151\145\163\040\157\146\040\164\150
\145\040\123\167\151\163\163\040\103\157\156\146\145\144\145\162
\141\164\151\157\156\061\021\060\017\006\003\125\004\013\023\010
\123\145\162\166\151\143\145\163\061\042\060\040\006\003\125\004
\013\023\031\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\151\145\163\061\043\060\041
\006\003\125\004\003\023\032\123\167\151\163\163\040\107\157\166
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040
\111\202\021\000\375\165\004\215\172\140\206\223\151\114\252\000
\074\145\323\075\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\002\001\000\045\332\337\170\260\046\334\237
\231\353\063\234\311\105\272\134\143\122\215\156\003\163\252\164
\110\305\015\013\322\027\014\054\013\322\306\045\203\324\124\315
\007\201\124\057\147\166\045\247\351\327\177\226\107\167\244\035
\233\105\377\361\330\366\236\107\016\164\214\023\304\362\276\326
\007\050\030\074\230\165\301\333\353\222\210\046\346\006\144\216
\371\322\375\342\231\065\201\321\330\165\027\265\163\352\335\350
\030\042\225\026\031\012\131\052\042\334\206\132\103\117\045\150
\066\251\330\223\000\217\136\305\303\141\206\360\322\024\011\225
\121\304\176\330\122\356\260\215\212\210\161\245\327\050\247\364
\334\006\130\045\136\304\125\030\010\225\164\174\270\001\347\116
\330\326\366\174\040\103\110\015\243\340\336\124\304\250\137\000

```
\111\103\323\105\073\202\145\156\356\213\243\001\042\126\232\361
\316\051\345\014\304\153\355\347\116\370\261\125\201\255\161\377
\204\373\010\127\346\107\312\255\207\370\106\370\372\360\065\204
\355\264\330\210\227\042\167\244\217\026\310\074\147\321\341\156
\004\254\173\217\066\315\336\245\010\254\052\215\365\247\035\237
\307\303\221\041\102\243\206\201\271\052\330\261\351\070\035\124
\010\230\071\012\021\312\062\016\063\315\364\114\352\250\112\006
\351\030\076\101\306\317\240\366\340\053\153\040\216\247\040\002
\353\060\101\201\260\350\344\256\244\030\211\053\337\024\360\022
\051\155\170\372\115\104\373\262\064\345\257\363\216\065\367\303
\316\054\013\030\264\320\171\217\023\277\003\213\146\270\265\141
\324\254\016\375\170\075\011\255\265\322\054\117\126\101\231\210
\104\014\176\147\343\144\237\372\132\052\130\167\121\151\261\315
\054\232\247\064\020\005\164\372\156\105\143\313\213\122\255\107
\221\242\022\310\242\046\004\305\320\042\036\003\263\262\222\067
\124\127\375\211\203\165\003\155\055\073\263\361\244\242\020\174
\234\223\215\243\120\204\071\213\225\131\101\366\002\166\006\212
\274\016\220\347\331\072\353\255\046\136\127\123\321\157\310\165
\340\253\221\173\153\241\177\371\033\120\250\334\376\115\006\341
\025\212\244\020\353\036\006\317\124\110\025\226\050\266\043\037
\032\343\174\245\217\372\067\127
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Swiss Government Root CA I"

Issuer: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal Authorities
of the Swiss Confederation,C=CH

Serial Number:fd:75:04:8d:7a:60:86:93:69:4c:aa:00:3c:65:d3:3d

Subject: CN=Swiss Government Root CA I,OU=Certification Authorities,OU=Services,O=The Federal
Authorities of the Swiss Confederation,C=CH

Not Valid Before: Tue Feb 15 09:00:00 2011

Not Valid After: Thu Feb 15 08:59:59 2035

Fingerprint (MD5): c7:c9:da:9b:76:e1:ac:86:6b:34:bd:03:3f:e3:cf:d2

Fingerprint (SHA1): a1:58:51:87:15:65:86:ce:f9:c4:54:e2:2a:b1:5c:58:74:56:07:b4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN

CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swiss Government Root CA I"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\241\130\121\207\025\145\206\316\371\304\124\342\052\261\134\130
\164\126\007\264
```

END

```

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\307\311\332\233\166\341\254\206\153\064\275\003\077\343\317\322
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\246\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\073\060\071\006\003\125\004\012\023\062\124\150\145\040\106
\145\144\145\162\141\154\040\101\165\164\150\157\162\151\164\151
\145\163\040\157\146\040\164\150\145\040\123\167\151\163\163\040
\103\157\156\146\145\144\145\162\141\164\151\157\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\043\060\041\006\003\125\004\003\023\032\123
\167\151\163\163\040\107\157\166\145\162\156\155\145\156\164\040
\122\157\157\164\040\103\101\040\111
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\375\165\004\215\172\140\206\223\151\114\252\000\074
\145\323\075
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Network Solutions Certificate Authority"
# Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
# Serial Number: 1c:a0:2d:c1:52:3b:6a:6d:8b:5c:1f:95:4a:ed:ac:30
# Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
# Not Valid Before: Sat Jan 01 00:00:00 2011
# Not Valid After: Tue Dec 31 23:59:59 2030
# Fingerprint (MD5): bd:a4:1d:36:de:c2:7a:8a:04:37:cb:f2:00:a6:65:54
# Fingerprint (SHA1): 71:89:9a:67:bf:33:af:31:be:fd:c0:71:f8:f7:33:b1:83:85:63:32
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Network Solutions Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103

```

```
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\034\240\055\301\122\073\152\155\213\134\037\225\112\355
\254\060
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\220\060\202\002\170\240\003\002\001\002\002\020\034
\240\055\301\122\073\152\155\213\134\037\225\112\355\254\060\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\142
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041\060
\037\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040
\123\157\154\165\164\151\157\156\163\040\114\056\114\056\103\056
\061\060\060\056\006\003\125\004\003\023\047\116\145\164\167\157
\162\153\040\123\157\154\165\164\151\157\156\163\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\060\036\027\015\061\061\060\061\060\061\060\060\060\060
\060\060\132\027\015\063\060\061\062\063\061\062\063\065\071\065
\071\132\060\142\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\041\060\037\006\003\125\004\012\023\030\116\145\164\167
\157\162\153\040\123\157\154\165\164\151\157\156\163\040\114\056
\114\056\103\056\061\060\060\056\006\003\125\004\003\023\047\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202
\001\012\002\202\001\001\000\344\274\176\222\060\155\306\330\216
\053\013\274\106\316\340\047\226\336\336\371\372\022\323\074\063
\163\263\004\057\274\161\214\345\237\266\042\140\076\137\135\316
\011\377\202\014\033\232\121\120\032\046\211\335\325\141\135\031
\334\022\017\055\012\242\103\135\027\320\064\222\040\352\163\317
\070\054\006\046\011\172\162\367\372\120\062\370\302\223\323\151
\242\043\316\101\261\314\344\325\037\066\321\212\072\370\214\143
\342\024\131\151\355\015\323\177\153\350\270\003\345\117\152\345
\230\143\151\110\005\276\056\377\063\266\351\227\131\151\370\147
\031\256\223\141\226\104\025\323\162\260\077\274\152\175\354\110
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\177\215\303\253\252\161\053\123\151\101\123\064\265\260\271\305
\006\012\304\260\105\365\101\135\156\211\105\173\075\073\046\214
\164\302\345\322\321\175\262\021\324\373\130\062\042\232\200\311
\334\375\014\351\177\136\003\227\316\073\000\024\207\047\160\070
\251\216\156\263\047\166\230\121\340\005\343\041\253\032\325\205
\042\074\051\265\232\026\305\200\250\364\273\153\060\217\057\106
\002\242\261\014\042\340\323\002\003\001\000\001\243\102\060\100
\060\035\006\003\125\035\016\004\026\004\024\041\060\311\373\000
\327\116\230\332\207\252\052\320\247\056\261\100\061\247\114\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\302\211\204\240\350\214\146\375\377\023\005\033
\303\072\216\230\111\212\370\252\000\134\046\375\162\152\243\176
\022\033\224\256\124\370\041\217\247\223\117\367\026\357\271\271
\263\062\300\045\041\061\146\067\054\011\260\376\062\260\067\354
\074\270\316\217\010\252\010\220\007\134\165\325\341\116\054\313
\002\044\351\242\136\351\365\170\065\042\006\034\362\037\210\261
\341\134\314\226\124\372\157\111\314\215\361\126\003\355\317\054
\237\047\336\345\312\203\104\276\106\100\371\127\056\322\177\061
\055\316\203\334\376\160\153\204\320\243\237\377\227\320\250\327
\002\354\261\054\360\357\163\070\075\231\254\304\117\001\277\325
\152\352\306\056\062\051\027\012\313\346\151\236\321\112\265\366
\337\216\031\370\225\351\105\251\016\315\155\101\131\040\236\163
\306\154\161\034\234\324\115\060\250\163\011\240\025\363\240\105
\046\303\133\375\273\271\330\055\327\037\365\005\060\031\366\256
\017\216\142\217\337\310\117\206\331\035\141\026\263\311\360\273
\373\307\365\257\001\042\107\354\330\332\317\034\363\123\146\272
\123\011\001\371

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Network Solutions Certificate Authority"

Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US

Serial Number:1c:a0:2d:c1:52:3b:6a:6d:8b:5c:1f:95:4a:ed:ac:30

Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US

Not Valid Before: Sat Jan 01 00:00:00 2011

Not Valid After: Tue Dec 31 23:59:59 2030

Fingerprint (MD5): bd:a4:1d:36:de:c2:7a:8a:04:37:cb:f2:00:a6:65:54

Fingerprint (SHA1): 71:89:9a:67:bf:33:af:31:be:fd:c0:71:f8:f7:33:b1:83:85:63:32

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

```
CKA_LABEL UTF8 "Network Solutions Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\161\211\232\147\277\063\257\061\276\375\300\161\370\367\063\261
\203\205\143\062
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\275\244\035\066\336\302\172\212\004\067\313\362\000\246\145\124
END
CKA_ISSUER MULTILINE_OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\034\240\055\301\122\073\152\155\213\134\037\225\112\355
\254\060
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "LuxTrust Global Root"
# Issuer: CN=LuxTrust Global Root,O=LuxTrust
s.a.,C=LU
# Serial Number: 3000 (0xbb8)
# Subject: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU
# Not Valid Before: Thu Mar 17 09:51:37 2011
# Not Valid After: Wed Mar 17 09:51:37 2021
# Fingerprint (MD5): 42:a5:21:7a:4c:af:c7:bf:fd:a7:f5:b2:10:4c:3e:be
# Fingerprint (SHA1): c9:3c:34:ea:90:d9:13:0c:0f:03:00:4b:98:bd:8b:35:70:91:56:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LuxTrust Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141
```

\154\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164

END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\002\013\270

END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\144\060\202\002\114\240\003\002\001\002\002\002\013
\270\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\104\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
\023\024\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\060\036\027\015\061\061\060\063\061\067
\060\071\065\061\063\067\132\027\015\062\061\060\063\061\067\060
\071\065\061\063\067\132\060\104\061\013\060\011\006\003\125\004
\006\023\002\114\125\061\026\060\024\006\003\125\004\012\023\015
\114\165\170\124\162\165\163\164\040\163\056\141\056\061\035\060
\033\006\003\125\004\003\023\024\114\165\170\124\162\165\163\164
\040\107\154\157\142\141\154\040\122\157\157\164\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\262\177\247
\100\360\042\312\014\366\353\261\361\313\016\225\127\100\165\257
\240\077\076\316\354\252\062\127\346\031\261\147\103\230\132\153
\174\263\270\372\170\234\252\246\204\262\140\033\200\101\316\143
\315\037\027\010\231\244\365\357\076\022\307\114\260\127\232\134
\170\100\170\374\105\215\332\221\147\334\072\121\271\155\163\346
\267\071\216\166\072\264\037\005\365\151\125\371\223\317\170\210
\112\276\252\233\327\173\107\133\106\004\114\202\026\246\065\366
\374\164\337\326\264\257\330\342\265\047\021\164\131\242\302\146
\054\150\012\341\230\210\210\074\212\005\165\024\343\270\256\363
\010\204\233\152\301\077\061\030\257\047\245\113\233\244\375\171
\061\336\230\075\016\141\312\207\230\301\370\212\060\234\372\076
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\061\210\146\377\154\155\104\064\257\010\167\076\046\322\162\364
\273\107\126\223\074\230\143\341\063\273\231\043\222\265\203\171
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only

Certificate

Trust for "LuxTrust Global Root"

Issuer: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU

Serial Number: 3000 (0xbb8)

Subject: CN=LuxTrust Global Root,O=LuxTrust s.a.,C=LU

Not Valid Before: Thu Mar 17 09:51:37 2011

Not Valid After: Wed Mar 17 09:51:37 2021

Fingerprint (MD5): 42:a5:21:7a:4c:af:c7:bf:fd:a7:f5:b2:10:4c:3e:be

Fingerprint (SHA1): c9:3c:34:ea:90:d9:13:0c:0f:03:00:4b:98:bd:8b:35:70:91:56:11

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "LuxTrust Global Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\311\074\064\352\220\331\023\014\017\003\000\113\230\275\213\065
\160\221\126\021
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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\102\245\041\172\114\257\307\277\375\247\365\262\020\114\076\276

END

CKA_ISSUER MULTILINE_OCTAL

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\026\060\024\006\003\125\004\012\023\015\114\165\170\124\162\165
\163\164\040\163\056\141\056\061\035\060\033\006\003\125\004\003
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END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\002\013\270

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "AC1 RAIZ MTIN"

Issuer: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

Serial Number:05:0b:41:5e:82:7b

Subject: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

Not Valid Before: Thu Nov 05 16:17:45 2009

Not Valid After: Sun Nov 03 16:17:45 2019

Fingerprint

(MD5): 27:13:d5:2c:70:06:3e:15:7b:d3:62:59:32:ea:01:05

Fingerprint (SHA1): 6a:d2:3b:9d:c4:8e:37:5f:85:9a:d9:ca:b5:85:32:5c:23:89:40:71

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AC1 RAIZ MTIN"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\003\125\004\005\023\011\123\062\070\061\071\060\060\061\105\061
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\104\117\122\040\104\105\040\123\105\122\126\111\103\111\117\123
\040\104\105\040\103\105\122\124\111\106\111\103\101\103\111\117
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\050\123\125\102\104\111\122\105\103\103\111\117\116\040\107\105
\116\105\122\101\114\040\104\105\040\120\122\117\103\105\123\117

\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125
\004\012\023\043\115\111\116\111\123\124\105\122\111\117\040\104
\105\040\124\122\101\102\101\112\117\040\105\040\111\116\115\111
\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007
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END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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\065\060\063\006\003\125\004\013\023\054\120\122\105\123\124\101
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\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125
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\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007
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CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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END

CKA_VALUE MULTILINE_OCTAL

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\241\331\323\014\376\056\157\012\246\123\113\357\321\363\107\255
\271\036\354\114\037\276\320\203\123\303\233\025\105\377\056\007
\321\332\152\222\105\346\154\127\133\044\056\121\151\311\060\317
\327\373\244\001\065\132\315\247\353\024\157\264\267\140\042\010
\305\161\310\223\342\276\045\137\365\014\372\130\121\075\173\310
\057\067\371\223\034\052\011\340\147\375\226\211\102\312\353\066
\260\326\033\246\120\017\132\235\166\377\244\117\306\354\015\304
\341\320\347\130\076\326\171\300\167\115\014\325\263\344\230\115
\335\106\056\122\260\342\017\015\102\066\245\020\044\122\050\276
\142\065\102\071\311\172\226\037\356\346\113\131\077\044\163\213
\277\042\113\146\362\333\017\065\361\067\235\240\044

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "AC1 RAIZ MTIN"

Issuer: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION

GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION

MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN

Serial Number:05:0b:41:5e:82:7b

```
# Subject: C=ES,L=MADRID,O=MINISTERIO DE TRABAJO E INMIGRACION,OU=SUBDIRECCION
GENERAL DE PROCESO DE DATOS,OU=PRESTADOR DE SERVICIOS DE CERTIFICACION
MTIN,2.5.4.5=S2819001E,CN=AC1 RAIZ MTIN
# Not Valid Before: Thu Nov 05 16:17:45 2009
# Not Valid After: Sun Nov 03 16:17:45 2019
# Fingerprint (MD5): 27:13:d5:2c:70:06:3e:15:7b:d3:62:59:32:ea:01:05
# Fingerprint (SHA1): 6a:d2:3b:9d:c4:8e:37:5f:85:9a:d9:ca:b5:85:32:5c:23:89:40:71
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC1 RAIZ MTIN"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\152\322\073\235\304\216\067\137\205\232\331\312\265\205\062\134
\043\211\100\161
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\047\023\325\054\160\006\076\025\173\323\142\131\062\352\001\005
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\342\061\026\060\024\006\003\125\004\003\023\015\101\103
\061\040\122\101\111\132\040\115\124\111\116\061\022\060\020\006
\003\125\004\005\023\011\123\062\070\061\071\060\060\061\105\061
\065\060\063\006\003\125\004\013\023\054\120\122\105\123\124\101
\104\117\122\040\104\105\040\123\105\122\126\111\103\111\117\123
\040\104\105\040\103\105\122\124\111\106\111\103\101\103\111\117
\116\040\115\124\111\116\061\061\060\057\006\003\125\004\013\023
\050\123\125\102\104\111\122\105\103\103\111\117\116\040\107\105
\116\105\122\101\114\040\104\105\040\120\122\117\103\105\123\117
\040\104\105\040\104\101\124\117\123\061\054\060\052\006\003\125
\004\012\023\043\115\111\116\111\123\124\105\122\111\117\040\104
\105\040\124\122\101\102\101\112\117\040\105\040\111\116\115\111
\107\122\101\103\111\117\116\061\017\060\015\006\003\125\004\007
\023\006\115\101\104\122\111\104\061\013\060\011\006\003\125\004
\006\023\002\105\123
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\006\005\013\101\136\202\173
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Microsoft Root Certificate Authority 2011"
```

```
# Issuer: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:3f:8b:c8:b5:fc:9f:b2:96:43:b5:69:d6:6c:42:e1:44
# Subject: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Mar 22 22:05:28 2011
#
Not Valid After: Sat Mar 22 22:13:04 2036
# Fingerprint (MD5): ce:04:90:d5:e5:6c:34:a5:ae:0b:e9:8b:e5:81:18:5d
# Fingerprint (SHA1): 8f:43:28:8a:d2:72:f3:10:3b:6f:b1:42:84:85:ea:30:14:c0:bc:fe
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\077\213\310\265\374\237\262\226\103\265\151\326\154\102
\341\104
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\355\060\202\003\325\240\003\002\001\002\002\020\077
\213\310\265\374\237\262\226\103\265\151\326\154\102\341\104\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
```

\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023
\060\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147
\164\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145
\144\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162
\141\164\151\157\156\061\062\060\060\006\003\125\004\003\023\051
\115\151\143\162\157\163\157\146\164\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\061\061\060\036\027\015\061\061\060
\063\062\062\062\062\060\065\062\070\132\027\015\063\066\060\063
\062\062\062\062\061\063\060\064\132\060\201\210\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125
\004\010\023\012\127\141\163\150\151\156\147\164\157\156\061\020
\060\016\006\003\125\004\007\023\007\122\145\144\155\157\156\144
\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157
\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156
\061\062\060\060\006\003\125\004\003\023\051\115\151\143\162\157
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040
\062\060\061\061\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\262\200\101\252\065\070\115\023\162\062\150
\042\115\270\262\361\377\325\122\274\154\307\365\322\112\214\066
\356\321\302\134\176\214\212\256\257\023\050\157\300\163\343\072
\316\320\045\250\132\072\155\357\250\270\131\253\023\043\150\315
\014\051\207\321\157\200\134\217\104\177\135\220\001\122\130\254
\121\305\137\052\207\334\334\330\012\035\301\003\271\173\260\126
\350\243\336\144\141\302\236\370\363\174\271\354\015\265\124\376
\114\266\145\117\210\360\234\110\231\014\102\013\011\174\061\131
\027\171\006\170\050\215\211\072\114\003\045\276\161\152\134\013
\347\204\140\244\231\042\343\322\257\204\244\247\373\321\230\355
\014\251\336\224\211\341\016\240\334\300\316\231\075\352\010\122
\273\126\171\344\037\204\272\036\270\264\304\111\134\117\061\113
\207\335\335\005\147\046\231\200\340\161\021\243\270\245\101\342
\244\123\271\367\062\051\203\014\023\277\066\136\004\263\113\103
\107\057\153\342\221\036\323\230\117\335\102\007\310\350\035\022
\374\231\251\153\076\222\176\310\326\151\072\374\144\275\266\011
\235\312\375\014\013\242\233\167\140\113\003\224\244\060\151\022
\326\102\055\301\101\114\312\334\252\375\217\133\203\106\232\331
\374\261\321\343\263\311\177\110\172\315\044\360\101\217\134\164
\320\254\260\020\040\006\111\267\307\055\041\310\127\343\320\206
\363\003\150\373\320\316\161\301\211\231\112\144\001\154\375\354
\060\221\317\101\074\222\307\345\272\206\035\141\204\307\137\203
\071\142\256\264\222\057\107\363\013\370\125\353\240\037\131\320
\273\164\233\036\320\166\346\362\351\006\327\020\350\372\144\336
\151\306\065\226\210\002\360\106\270\077\047\231\157\313\161\211
\051\065\367\110\026\002\065\217\325\171\174\115\002\317\137\353
\212\203\117\105\161\210\371\251\015\116\162\351\302\234\007\317

\111\033\116\004\016\143\121\214\136\330\000\301\125\054\266\306
\340\302\145\116\311\064\071\365\234\263\304\176\350\141\156\023
\137\025\304\137\331\176\355\035\316\356\104\354\313\056\206\261
\354\070\366\160\355\253\134\023\301\331\017\015\307\200\262\125
\355\064\367\254\233\344\303\332\347\107\074\246\265\217\061\337
\305\113\257\353\361\002\003\001\000\001\243\121\060\117\060\013
\006\003\125\035\017\004\004\003\002\001\206\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\162\055\072\002\061\220\103\271\024
\005\116\341\352\247\307\061\321\043\211\064\060\020\006\011\053
\006\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001
\000\177\162\317\017\267\305\025\333\233\300\111\312\046\133\376
\236\023\346\323\360\322\333\227\137\362\113\077\115\263\256\031
\256\355\327\227\240\254\357\251\072\243\302\101\260\345\270\221
\236\023\201\044\003\346\011\375\077\127\100\071\041\044\126\321
\020\057\113\100\251\066\206\113\264\123\127\232\373\361\176\211
\217\021\376\030\154\121\252\350\355\011\225\265\345\161\311\241
\351\207\165\246\025\177\311\176\067\124\136\164\223\305\303\147
\314\015\117\153\250\027\014\155\010\222\176\213\335\201\252\055
\160\041\303\075\006\024\273\277\044\136\247\204\327\077\017\041
\042\275\113\000\006\333\227\034\330\136\324\305\013\134\207\156
\120\244\350\303\070\244\373\313\054\305\222\146\233\205\136\313
\172\154\223\174\200\051\130\133\127\265\100\151\272\010\171\246
\144\142\025\235\207\226\105\265\146\043\040\003\213\034\163\240
\323\242\171\063\340\120\131\206\333\057\345\002\045\352\163\052
\237\000\024\310\066\307\222\073\351\116\000\354\330\126\011\271
\063\111\022\322\124\013\001\253\254\107\266\221\051\175\114\264
\165\200\122\001\350\312\202\366\237\314\254\234\217\027\352\057
\046\260\253\162\254\013\376\236\121\036\307\103\125\147\117\121
\263\127\326\266\354\356\122\267\072\351\116\341\327\201\210\274
\117\216\165\273\113\250\360\065\252\046\324\147\147\111\262\160
\114\073\223\334\035\337\170\220\206\162\262\070\244\321\334\222
\115\311\130\353\053\022\134\324\073\256\214\153\260\203\345\001
\077\370\011\062\366\223\065\064\042\257\335\067\015\167\011\200
\053\315\110\000\361\214\231\031\107\005\001\351\321\277\321\116
\320\346\050\103\067\231\244\012\112\010\331\232\161\163\322\252
\315\061\023\143\166\241\067\157\222\070\036\175\022\074\146\062
\347\313\155\341\374\122\211\335\312\326\146\005\232\226\141\276
\242\050\307\034\243\247\066\120\074\072\244\337\112\156\346\207
\073\316\353\360\340\201\067\235\023\074\122\216\275\271\035\064
\306\035\325\012\152\075\230\051\160\214\211\052\321\253\202\020
\110\037\334\364\357\245\305\273\125\032\070\143\204\116\267\154
\255\225\124\354\145\042\020\111\027\270\300\036\307\017\254\124
\107

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL
CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Microsoft Root Certificate Authority 2011"
# Issuer: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:3f:8b:c8:b5:fc:9f:b2:96:43:b5:69:d6:6c:42:e1:44
# Subject: CN=Microsoft Root Certificate Authority 2011,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Mar 22 22:05:28 2011
# Not Valid After: Sat Mar 22 22:13:04 2036
# Fingerprint (MD5): ce:04:90:d5:e5:6c:34:a5:ae:0b:e9:8b:e5:81:18:5d
# Fingerprint (SHA1): 8f:43:28:8a:d2:72:f3:10:3b:6f:b1:42:84:85:ea:30:14:c0:bc:fe
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2011"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\217\103\050\212\322\162\363\020\073\157\261\102\204\205\352\060
\024\300\274\376
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\316\004\220\325\345\154\064\245\256\013\351\213\345\201\030\135
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\077\213\310\265\374\237\262\226\103\265\151\326\154\102
\341\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST

```

CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "CCA India 2011"
Issuer: CN=CCA India 2011,O=India PKI,C=IN
Serial Number: 10126 (0x278e)
Subject: CN=CCA India 2011,O=India PKI,C=IN
Not Valid Before: Fri Mar 11 06:48:52 2011
Not Valid After: Fri Mar 11 06:48:52 2016
Fingerprint (MD5): 6e:3e:bc:f1:11:03:dc:4f:58:d5:2c:b0:74:f4:18:c8
Fingerprint (SHA1): be:d5:25:d1:ac:63:a7:fc:6a:66:0b:a7:a8:95:81:8d:5e:8d:d5:64

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2011"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061

END
CKA_ID
UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\216

END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\043\060\202\002\013\240\003\002\001\002\002\002\047
\216\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061\060\036\027\015
\061\061\060\063\061\061\060\066\064\070\065\062\132\027\015\061
\066\060\063\061\061\060\066\064\070\065\062\132\060\072\061\013
\060\011\006\003\125\004\006\023\002\111\116\061\022\060\020\006
\003\125\004\012\023\011\111\156\144\151\141\040\120\113\111\061
\027\060\025\006\003\125\004\003\023\016\103\103\101\040\111\156
\144\151\141\040\062\060\061\061\060\202\001\042\060\015\006\011

\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\207\012\036\016\271\240\250
\040\230\032\270\172\025\366\107\361\277\322\306\047\344\022\152
\226\004\147\165\315\214\306\343\364\335\312\325\304\034\065\356
\115\351\344\042\324\227\070\327\254\143\151\110\300\174\171\142
\277\307\042\111\133\106\301\361\030\024\116\030\035\054\245\132
\222\270\205\025\257\027\126\023\216\237\026\016\042\226\201\204
\171\043\102\354\117\336\257\366\277\211\117\000\136\346\327\010
\322\225\224\232\023\054\004\021\203\357\221\217\010\125\254\172
\126\104\233\305\364\324\027\353\344\167\115\224\341\101\130\021
\351\242\252\011\206\055\046\041\040\365\300\314\303\025\314\114
\011\273\335\334\365\122\003\171\140\217\074\171\072\045\064\043
\207\110\165\362\101\160\115\032\060\010\206\165\316\130\031\250
\327\025\176\043\362\347\111\276\377\376\127\122\170\102\363\046
\167\335\172\367\142\345\313\135\226\063\224\223\273\304\032\026
\257\010\127\353\234\345\367\043\164\215\351\035\013\261\212\224
\163\231\021\221\305\150\240\361\212\015\201\255\264\121\150\156
\111\206\000\006\122\116\051\103\347\002\003\001\000\001\243\063
\060\061\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\021\006\003\125\035\016\004\012\004\010\115\007
\250\143\362\333\034\337\060\013\006\003\125\035\017\004\004\003
\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\001\001\000\156\024\332\040\362\110\153\144\377
\052\164\315\126\265\305\071\017\176\141\037\065\131\033\035\050
\155\043\164\235\170\277\253\255\211\000\271\160\205\365\350\024
\076\344\354\237\226\144\134\322\261\042\040\243\010\234\350\014
\113\150\050\216\125\005\277\076\340\116\332\330\234\320\156\040
\354\376\172\073\302\066\107\227\330\053\010\263\256\302\321\346
\010\077\112\350\072\077\126\365\340\345\077\362\151\266\171\022
\340\360\071\267\030\354\322\351\204\016\030\070\026\212\111\073
\157\127\325\071\073\277\023\360\300\247\315\362\075\036\154\221
\247\167\143\274\253\331\126\070\017\112\271\031\300\053\214\373
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\246\143\304\317\350\261\244\222\105\150\362\350\214\261\255\176
\055\040\373\270\245\124\355\312\015\217\062\035\150\246\061\156
\260\310\236\325\372\277\006\233\157\051\175\172\003\111\277\053
\173\131\223\024\305\352\313\361\114\051\202\016\051\356\212\124
\174\074\315\125\202\045\162\016\161\116\045\170\115\323\116\131
\100\312\316\363\231\321\242

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "CCA India 2011"

Issuer: CN=CCA India 2011,O=India PKI,C=IN

```
# Serial Number: 10126 (0x278e)
# Subject: CN=CCA India 2011,O=India PKI,C=IN
# Not Valid
  Before: Fri Mar 11 06:48:52 2011
# Not Valid After: Fri Mar 11 06:48:52 2016
# Fingerprint (MD5): 6e:3e:bc:f1:11:03:dc:4f:58:d5:2c:b0:74:f4:18:c8
# Fingerprint (SHA1): be:d5:25:d1:ac:63:a7:fc:6a:66:0b:a7:a8:95:81:8d:5e:8d:d5:64
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CCA India 2011"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\276\325\045\321\254\143\247\374\152\146\013\247\250\225\201\215
\136\215\325\144
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\156\076\274\361\021\003\334\117\130\325\054\260\164\364\030\310
END
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\022\060\020\006\003\125\004\012\023\011\111\156\144\151\141\040
\120\113\111\061\027\060\025\006\003\125\004\003\023\016\103\103
\101\040\111\156\144\151\141\040\062\060\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\047\216
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
  CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ANCERT Certificados Notariales V2"
# Issuer: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
# Serial Number:09:bd:56:05:2a:13:16:f4:68:4f:74:0e:a9:7d:1c:48
# Subject: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
# Not Valid Before: Tue May 25 16:56:14 2010
# Not Valid After: Sat May 25 16:56:14 2030
# Fingerprint (MD5): 75:70:cb:6e:6b:d6:9b:7d:90:bb:69:5e:59:f0:62:b4
# Fingerprint (SHA1): 6f:62:de:b8:6c:85:58:5a:e4:2e:47:8d:b4:d7:6d:b3:67:58:5a:e6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados Notariales V2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\116\157\164\141\162\151\141\154\145\163\040\126\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\052\060\050\006\003\125\004\003\023\041\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\116\157\164\141\162\151\141\154\145\163\040\126\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\011\275\126\005\052\023\026\364\150\117\164\016\251\175
\034\110
END
CKA_VALUE MULTILINE_OCTAL
\060\202\007\022\060\202\004\372\240\003\002\001\002\002\020\011
\275\126\005\052\023\026\364\150\117\164\016\251\175\034\110\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\174
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\101\060
\077\006\003\125\004\012\023\070\101\147\145\156\143\151\141\040
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164
\151\146\151\143\141\143\151\157\156\040\123\056\114\056\125\056
\040\055\040\103\111\106\040\102\070\063\063\071\065\071\070\070
\061\052\060\050\006\003\125\004\003\023\041\101\116\103\105\122
\124\040\103\145\162\164\151\146\151\143\141\144\157\163\040\116
\157\164\141\162\151\141\154\145\163\040\126\062\060\036\027\015
\061\060\060\065\062\065\061\066\065\066\061\064\132\027\015\063
\060\060\065\062\065\061\066\065\066\061\064\132\060\174\061\013
\060\011\006\003\125\004\006\023\002\105\123\061\101\060\077\006
\003\125\004\012\023\070\101\147\145\156\143\151\141\040\116\157
\164\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146
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\141\162\151\141\154\145\163\040\126\062\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\262\346\271\306\035
\152\052\055\111\305\374\374\324\144\100\320\340\024\056\367\240
\302\377\222\363\101\246\264\077\332\276\031\024\221\224\166\323
\025\314\136\177\170\120\172\333\332\305\105\252\313\034\043\171
\163\220\250\273\147\001\163\216\316\100\371\032\251\252\207\344
\223\222\017\134\150\134\136\360\006\140\053\130\334\074\155\074
\307\172\060\153\005\252\222\206\163\052\322\362\032\210\304\333
\345\132\146\216\165\311\102\077\233\210\050\100\036\365\251\134
\036\372\310\101\241\060\253\013\234\356\026\242\301\055\245\205
\372\355\240\014\350\177\226\112\173\275\217\232\242\030\166\322
\257\335\267\075\020\253\122\020\210\256\035\353\270\062\164\226
\364\267\252\047\367\245\007\015\343\224\127\152\124\040\167\315
\035\274\171\055\344\234\264\336\121\210\376\126\326\075\213\241
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\343\120\276\231\227\341\374\036\021\171\153\116\152\317\234\205
\012\034\226\052\300\040\066\024\305\011\027\142\073\364\255\352
\325\327\375\320\071\052\170\323\320\242\317\310\163\060\011\107
\305\116\031\375\270\060\324\017\200\230\210\206\301\114\101\172
\043\305\103\375\136\022\270\076\017\261\267\201\142\014\176\157
\343\173\232\302\302\107\021\041\037\317\236\321\060\316\203\301
\020\115\100\167\327\265\302\113\062\100\102\372\233\260\254\317
\353\041\330\031\353\144\305\153\335\125\055\200\207\104\174\114
\074\253\015\330\022\277\064\202\214\261\252\304\270\153\350\016
\106\167\322\213\006\035\102\373\254\275\311\347\063\263\042\157
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\032\106\330\311\320\214\344\134\134\041\005\221\361\144\344\254
\305\067\256\265\275\147\023\256\051\345\263\102\304\160\011\243
\135\114\353\067\040\343\360\365\163\063\073\302\374\216\121\205
\066\052\313\201\333\016\211\043\331\342\341\150\272\054\104\167
\076\034\100\272\360\147\216\030\207\360\075\327\351\077\107\133
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\115\126\277\177\135\004\325\255\050\133\115\275\363\303\017\025
\260\161\332\126\215\100\125\127\246\175\142\242\255\023\151\121
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\216\204\037\332\041\014\111\210\103\323\245\365\202\015\166\206
\303\054\314\220\273\263\270\253\306\313\256\300\027\121\236\323
\200\367\044\332\034\354\316\022\203\316\116\066\060\071\165\370
\164\166\220\202\236\076\100\114\014\024\271\032\036\110\152\260
\061\352\210\177\200\101\100\123\173\070\113\207\220\140\172\113
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\337\130\071\350\232\305\244\353\354\141\063\010\205\044\153\117
\006\351\255\220\245\066\142\154\343\335\175\011\037\063\277\267
\273\367\311\165\005\367\133\253\372\207\131\257\032\147\020\176
\204\334\214\160\326\104\351\020\301\330\233\056\321\306\100\152
\352\346\132\017\020\175\154\373\125\207\272\115\265\161\003\236
\027\217\170\332\125\075\127\136\042\012\152\230\360\215\010\315
\335\226\102\132\033\315\272\157\047\270\164\047\250\077\345\240


```
\326\163\307\136\057\041
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "ANCERT Certificados Notariales V2"
# Issuer: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
# Serial Number:09:bd:56:05:2a:13:16:f4:68:4f:74:0e:a9:7d:1c:48
#
Subject: CN=ANCERT Certificados Notariales V2,O=Agencia Notarial de Certificacion S.L.U. - CIF
B83395988,C=ES
# Not Valid Before: Tue May 25 16:56:14 2010
# Not Valid After: Sat May 25 16:56:14 2030
# Fingerprint (MD5): 75:70:cb:6e:6b:d6:9b:7d:90:bb:69:5e:59:f0:62:b4
# Fingerprint (SHA1): 6f:62:de:b8:6c:85:58:5a:e4:2e:47:8d:b4:d7:6d:b3:67:58:5a:e6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados Notariales V2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\157\142\336\270\154\205\130\132\344\056\107\215\264\327\155\263
\147\130\132\346
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\165\160\313\156\153\326\233\175\220\273\151\136\131\360\142\264
END
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
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\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\116\157\164\141\162\151\141\154\145\163\040\126\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\011\275\126\005\052\023\026\364\150\117\164\016\251\175
\034\110
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "ANCERT Certificados CGN V2"
Issuer: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF B83395988,C=ES
Serial Number:0f:38:8c:70:fe:a6:95:5d:e9:5d:9c:87:af:79:04:99
Subject: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion
S.L.U. - CIF B83395988,C=ES
Not Valid Before: Tue May 25 16:31:22 2010
Not Valid After: Sat May 25 16:31:23 2030
Fingerprint (MD5): 92:45:af:c3:89:71:e6:87:1d:8e:5a:20:a6:33:0e:93
Fingerprint (SHA1): 7e:b1:a0:42:9b:e5:f4:28:ac:2b:93:97:1d:7c:84:48:a5:36:07:0c

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados CGN V2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\043\060\041\006\003\125\004\003\023\032\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\103\107\116\040\126\062

END

CKA_ID
UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\043\060\041\006\003\125\004\003\023\032\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\103\107\116\040\126\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\017\070\214\160\376\246\225\135\351\135\234\207\257\171
\004\231

END

CKA_VALUE MULTILINE_OCTAL
\060\202\007\004\060\202\004\354\240\003\002\001\002\002\020\017
\070\214\160\376\246\225\135\351\135\234\207\257\171\004\231\060

\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\165
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\101\060
\077\006\003\125\004\012\023\070\101\147\145\156\143\151\141\040
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164
\151\146\151\143\141\143\151\157\156\040\123\056\114\056\125\056
\040\055\040\103\111\106\040\102\070\063\063\071\065\071\070\070
\061\043\060\041\006\003\125\004\003\023\032\101\116\103\105\122
\124\040\103\145\162\164\151\146\151\143\141\144\157\163\040\103
\107\116\040\126\062\060\036\027\015\061\060\060\065\062\065\061
\066\063\061\062\062\132\027\015\063\060\060\065\062\065\061\066
\063\061\062\063\132\060\165\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\101\060\077\006\003\125\004\012\023\070\101
\147\145\156\143\151\141\040\116\157\164\141\162\151\141\154\040
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156
\040\123\056\114\056\125\056\040\055\040\103\111\106\040\102\070
\063\063\071\065\071\070\070\061\043\060\041\006\003\125\004\003
\023\032\101\116\103\105\122\124\040\103\145\162\164\151\146\151
\143\141\144\157\163\040\103\107\116\040\126\062\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\235\122\160
\351\047\030\203\312\352\304\231\330\246\341\056\024\257\156\036
\016\144\312\201\067\125\047\034\027\167\130\147\037\214\311\371
\302\212\142\145\050\164\233\342\321\276\125\007\166\166\356\174
\155\116\143\133\036\112\045\165\340\007\241\320\322\202\247\316
\017\063\353\272\024\300\145\262\112\056\345\145\274\042\322\257
\032\016\312\313\363\144\145\053\054\231\243\227\213\213\165\060
\376\146\372\301\117\113\067\120\214\077\363\336\231\172\116\207
\234\040\106\162\227\376\126\033\146\116\240\202\123\243\134\330
\050\106\014\005\027\157\070\326\134\237\016\045\042\301\206\343
\134\032\124\333\256\235\145\175\000\222\337\250\041\041\305\133
\020\046\164\341\261\163\127\144\174\175\027\003\014\352\367\024
\227\017\371\305\356\135\165\260\305\306\012\013\264\076\111\343
\031\306\233\104\223\374\132\025\144\012\262\203\377\200\136\210
\011\320\312\040\243\133\373\333\315\341\032\167\043\030\160\032
\213\355\104\077\326\032\250\066\070\341\235\057\247\167\304\172
\263\300\162\262\162\315\036\077\020\136\032\210\164\215\360\022
\305\367\257\111\334\225\257\053\115\264\220\312\371\356\357\014
\343\277\026\067\043\123\343\051\372\364\164\151\150\075\127\155
\024\140\212\144\151\050\144\115\372\066\107\375\270\022\316\303
\206\252\134\334\146\071\007\117\073\343\343\305\150\256\316\340
\071\134\040\203\077\022\012\070\263\000\301\134\023\227\042\136
\072\113\065\231\370\304\036\336\371\210\021\216\204\311\213\062
\362\322\327\277\042\007\077\140\170\056\165\034\242\272\043\022
\323\360\117\120\071\354\311\167\047\307\132\052\216\323\271\265
\164\004\231\025\057\056\206\137\217\006\301\312\352\342\250\037
\115\175\063\204\221\244\222\303\320\246\110\135\146\032\167\204
\040\120\234\352\004\013\014\043\226\317\261\234\374\271\272\037
\227\250\323\253\003\145\057\175\256\124\307\171\342\034\066\335

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\071\061\003\330\261\144\167\003\306\370\243\215\374\052\171\347
\020\275\271\155\221\034\076\235\313\274\125\177\042\376\141\204
\370\330\324\247\041\172\071\136\162\062\353\114\165\002\003\001
\000\001\243\202\001\216\060\202\001\212\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\202\001\045\006
\003\125\035\040\004\202\001\034\060\202\001\030\060\202\001\024
\006\011\053\006\001\004\001\201\223\150\004\060\202\001\005\060
\045\006\010\053\006\001\005\005\007\002\001\026\031\150\164\164
\160\072\057\057\167\167\167\056\141\156\143\145\162\164\056\143
\157\155\057\143\160\163\060\201\333\006\010\053\006\001\005\005
\007\002\002\060\201\316\060\015\026\006\101\116\103\105\122\124
\060\003\002\001\001\036\201\274\000\101\000\147\000\145\000\156
\000\143\000\151\000\141\000\040\000\116\000\157\000\164\000\141
\000\162\000\151\000\141\000\154\000\040\000\144\000\145\000\040
\000\103\000\145\000\162\000\164\000\151\000\146\000\151\000\143
\000\141\000\143\000\151\000\157\000\156\000\056\000\040\000\120
\000\141\000\163\000\145\000\157\000\040\000\144\000\145\000\154
\000\240\000\107\000\145\000\156\000\145\000\162\000\141\000\154
\000\040\000\115\000\141\000\162\000\164\000\151\000\156\000\145
\000\172\000\040\000\103\000\141\000\155\000\160\000\157\000\163
\000\040\000\064\000\066\000\040\000\066\000\141\000\040\000\160
\000\154\000\141\000\156\000\164\000\141\000\040\000\062\000\070
\000\060\000\061\000\060\000\040\000\115\000\141\000\144\000\162
\000\151\000\144\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\206\060\035\006\003\125\035\016\004\026\004\024\005
\156\341\241\232\356\007\257\316\365\264\323\145\075\004\120\342
\320\233\104\060\037\006\003\125\035\043\004\030\060\026\200\024
\005\156\341\241\232\356\007\257\316\365\264\323\145\075\004\120
\342\320\233\104\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\002\001\000\177\124\100\031\044\312\114\023
\366\023\371\134\142\225\060\325\270\340\223\200\154\324\025\106
\324\047\076\222\122\252\334\201\143\206\100\333\325\045\257\237
\223\154\012\365\115\241\376\124\226\135\207\257\021\223\017\213
\362\343\360\037\112\237\374\251\321\311\120\167\137\230\010\010
\055\172\213\201\020\314\073\002\124\130\345\306\247\364\367\312
\350\366\067\006\176\347\021\327\154\205\143\367\250\243\016\342
\045\142\004\244\362\142\123\234\107\264\247\144\273\201\345\326
\136\126\021\276\105\021\141\302\146\351\364\015\164\250\253\371
\133\277\202\262\221\246\120\373\207\176\157\273\310\353\005\242
\271\020\327\033\102\007\125\317\211\346\277\373\271\360\152\071
\127\123\160\214\275\113\243\151\277\037\213\246\134\115\145\212
\271\000\011\350\150\277\011\047\007\115\136\332\122\011\214\345
\161\223\212\314\205\216\322\067\136\123\334\202\155\013\126\112
\204\171\012\364\020\045\104\365\157\135\032\146\265\315\325\020
\113\207\132\116\324\177\344\161\254\356\150\237\274\372\056\130
\301\304\236\177\244\131\205\340\122\016\362\307\107\165\025\055
\054\166\214\017\105\005\065\140\370\173\073\167\062\177\050\200

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\011\332\061\274\161\175\341\254\221\315\140\012\171\040\354\156
\073\267\204\340\162\363\251\112\320\057\344\133\343\322\032\324
\112\274\365\166\371\177\052\031\110\353\335\016\317\231\126\105
\270\175\326\011\216\016\316\263\204\150\111\204\124\065\113\344
\231\033\257\363\250\024\363\124\230\012\200\176\117\274\362\146
\055\046\377\060\215\247\366\275\333\232\217\345\341\337\273\267
\062\016\371\222\157\151\343\344\166\323\000\066\361\055\136\307
\023\137\325\331\152\055\350\321\033\153\166\313\030\156\016\005
\020\365\132\362\111\033\131\264\205\352\312\031\164\314\273\122
\342\067\214\302\152\002\045\302\322\161\244\222\333\216\311\326
\251\156\320\205\050\155\134\155\010\170\002\260\171\014\127\157
\013\132\001\343\204\204\002\366\317\362\253\143\353\002\152\271
\313\112\030\325\071\042\074\126\112\252\225\210\346\060\000\037
\215\041\041\311\127\356\271\267\104\051\210\117\266\053\247\024
\356\216\356\157\276\026\320\023
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ANCERT Certificados CGN V2"

Issuer: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF B83395988,C=ES

Serial Number:0f:38:8c:70:fe:a6:95:5d:e9:5d:9c:87:af:79:04:99

Subject: CN=ANCERT Certificados CGN V2,O=Agencia Notarial de Certificacion S.L.U. - CIF B83395988,C=ES

Not Valid Before: Tue May 25 16:31:22 2010

Not Valid After: Sat May 25 16:31:23 2030

Fingerprint (MD5): 92:45:af:c3:89:71:e6:87:1d:8e:5a:20:a6:33:0e:93

Fingerprint (SHA1): 7e:b1:a0:42:9b:e5:f4:28:ac:2b:93:97:1d:7c:84:48:a5:36:07:0c

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ANCERT Certificados CGN V2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\176\261\240\102\233\345\364\050\254\053\223\227\035\174\204\110
\245\066\007\014
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END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

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\222\105\257\303\211\161\346\207\035\216\132\040\246\063\016\223
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END

CKA_ISSUER MULTILINE_OCTAL

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\101\060\077\006\003\125\004\012\023\070\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
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\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\125\056\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\043\060\041\006\003\125\004\003\023\032\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\103\107\116\040\126\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

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\002\020\017\070\214\160\376\246\225\135\351\135\234\207\257\171
\004\231
```

END

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CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

Microsoft Code

Signing Only Certificate

Certificate "EE Certification Centre Root CA"

Issuer: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE

Serial Number:54:80:f9:a0:73:ed:3f:00:4c:ca:89:d8:e3:71:e6:4a

Subject: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE

Not Valid Before: Sat Oct 30 10:10:30 2010

Not Valid After: Tue Dec 17 23:59:59 2030

Fingerprint (MD5): 43:5e:88:d4:7d:1a:4a:7e:fd:84:2e:52:eb:01:d4:6f

Fingerprint (SHA1): c9:a8:b9:e7:55:80:5e:58:e3:53:77:a7:25:eb:af:c3:7b:27:cc:d7

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "EE Certification Centre Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162
\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153
\151\100\163\153\056\145\145
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END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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\060\165\061\013\060\011\006\003\125\004\006\023\002\105\105\061
\042\060\040\006\003\125\004\012\014\031\101\123\040\123\145\162
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\164\151\146\151\164\163\145\145\162\151\155\151\163\153\145\163
\153\165\163\061\050\060\046\006\003\125\004\003\014\037\105\105
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060
\026\006\011\052\206\110\206\367\015\001\011\001\026\011\160\153
\151\100\163\153\056\145\145

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\124\200\371\240\163\355\077\000\114\312\211\330\343\161
\346\112

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\004\003\060\202\002\353\240\003\002\001\002\002\020\124
\200\371\240\163\355\077\000\114\312\211\330\343\161\346\112\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\165
\061\013\060\011\006\003\125\004\006\023\002\105\105\061\042\060
\040\006\003\125\004\012\014\031\101\123\040\123\145\162\164\151
\146\151\164\163\145\145\162\151\155\151\163\153\145\163\153\165
\163\061\050\060\046\006\003\125\004\003\014\037\105\105\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\103\145\156
\164\162\145\040\122\157\157\164\040\103\101\061\030\060\026\006
\011\052\206\110\206\367\015\001\011\001\026\011\160\153\151\100
\163\153\056\145\145\060\042\030\017\062\060\061\060\061\060\063
\060\061\060\061\060\063\060\132\030\017\062\060\063\060\061\062
\061\067\062\063\065\071\065\071\132\060\165\061\013\060\011\006
\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125\004
\012\014\031\101\123\040\123\145\162\164\151\146\151\164\163\145
\145\162\151\155\151\163\153\145\163\153\165\163\061\050\060\046
\006\003\125\004\003\014\037\105\105\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\103\145\156\164\162\145\040\122
\157\157\164\040\103\101\061\030\060\026\006\011\052\206\110\206
\367\015\001\011\001\026\011\160\153\151\100\163\153\056\145\145
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\310\040\300\354\340\305\113\253\007\170\225\363\104\356\373
\013\014\377\164\216\141\273\261\142\352\043\330\253\241\145\062
\172\353\216\027\117\226\330\012\173\221\242\143\154\307\214\114
\056\171\277\251\005\374\151\134\225\215\142\371\271\160\355\303
\121\175\320\223\346\154\353\060\113\341\274\175\277\122\233\316
\156\173\145\362\070\261\300\242\062\357\142\262\150\340\141\123
\301\066\225\377\354\224\272\066\256\234\034\247\062\017\345\174
\264\306\157\164\375\173\030\350\254\127\355\006\040\113\062\060
\130\133\375\315\250\346\241\374\160\274\216\222\163\333\227\247
\174\041\256\075\301\365\110\207\154\047\275\237\045\164\201\125
\260\367\165\366\075\244\144\153\326\117\347\316\100\255\017\335
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CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "EE Certification Centre Root CA"

Issuer: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE

Serial Number:54:80:f9:a0:73:ed:3f:00:4c:ca:89:d8:e3:71:e6:4a

Subject: 1.2.840.113549.1.9.1=pki@sk.ee,CN=EE Certification Centre Root CA,O=AS
Sertifitseerimiskeskus,C=EE

Not Valid Before: Sat Oct 30 10:10:30 2010

Not Valid After: Tue Dec 17 23:59:59 2030

Fingerprint (MD5): 43:5e:88:d4:7d:1a:4a:7e:fd:84:2e:52:eb:01:d4:6f

Fingerprint (SHA1): c9:a8:b9:e7:55:80:5e:58:e3:53:77:a7:25:eb:af:c3:7b:27:cc:d7

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST


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CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "EE Certification Centre Root CA"
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\311\250\271\347\125\200\136\130\343\123\167\247\045\353\257\303
\173\047\314\327
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CKA_CERT_MD5_HASH MULTILINE_OCTAL
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CKA_ISSUER MULTILINE_OCTAL
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\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\103
\145\156\164\162\145\040\122\157\157\164\040\103\101\061\030\060
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\346\112
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CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Autoridad de Certificacion Raiz del Estado Venezolano"
# Issuer: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion
Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad
de Certificacion Raiz del Estado Venezolano
# Serial Number: 10 (0xa)
# Subject: 1.2.840.113549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion
Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad
de Certificacion Raiz del Estado Venezolano
# Not Valid Before: Tue Dec 28 16:41:36 2010
# Not Valid After: Mon Dec 23 23:59:59 2030
# Fingerprint (MD5): 96:14:69:08:a8:36:59:d7:a0:35:14:89:58:50:5b:ab
#
Fingerprint (SHA1): 39:8e:be:9c:0f:46:c0:79:c3:c7:af:e0:7a:2f:dd:9f:ae:5f:8a:5c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE

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CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Raiz del Estado Venezolano"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144
\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151
\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066
\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141
\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162
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\166\145
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CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\012

END

CKA_VALUE MULTILINE_OCTAL

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\136\244\121\301\107\273\145\262\013\125\342\057\251\243\047\274
\341\074\212\307\154\003\126\243\251\051\242\233\212\225\330\037
\367\266\022\140\026\276\172\364\375\003\201\117\375\201\201\252
\117\201\160\036\056\357\300\222\022\173\273\017\205\210\304\371
\035\101\265\272\044\052\303\050\046\023\312\371\000\373\327\303
\134\371\150\351\033\301\030\042\311\242\154\144\303\370\071\303
\116\041\335\326\302\336\345\266\054\311\134\070\360\336\136\152
\344\047\364\270\063\304\313\141\222\063\123\250\314\374\235\315
\123\373\050\013\357\355\177\260\217\164\042\266\065\127\200\250
\256\005\256\051\012\073\262\244\375\075\343\324\301\220\366\077
\316\274\344\104\376\321\301\176\050\057\375\000\044\062\040\210
\304\157\030\173\221\016\110\220\274\226\142\140\201\155\024\000
\032\121\272\265\135\151\215\141\107\034\054\254\116\105\040\251
\110\105\243\207\111\243\170\220\335\066\102\177\330\166\157\375
\155\203\001\306\371\177\230\040\177\226\056\042\140\253\242\047
\300\260\065\044\320\311\277\063\231\042\123\016\156\037\142\114
\046\374\044\063\312\301\003\314\251\027\141\143\063\044\314\150

```
\100\357\257\242\342\205\303\210\060\323\105\033\356\126\352\126
\012\017\012\107\233\060\131\330\111\321\060\220\014\047\052\046
\010\050\134\062\037\047\327\255\013\111\345\027\121\143\317\346
\015\073\140\121\032\275\103\011\120\346\221\265\143\346\144\227
\252\013\227\023\001\006\206\134\245\037\225\276\120\216\013\262
\322\144\177\333\253\114\346\103\306\344\205\215\152\376\215\376
\273\224\125\036\221\123\047\010\323\272\147\075\072\241\311\301
\305\024\272\371\103\134\305\216\041\214\202\242\375\052\062\045
\325\026\214\025\126\300\230\374\056\262\216\031\244\026\161\303
\113\335\161\376\161\354\042\035\360\301\214\230\201\207\264\277
\002\270\304\060\061\107\302\300\260\257\173\063\143\012\335\254
\105\233\301\314\200\207\364\331\230\136\234\206\376\232\004\377
\146\112\374\173\141\124\276\127\143\005\007\306\247\001\165\131
\344\156\071\073\000\364\252\235\363\237\210\277\317\321\045\053
\337\177\163\355\026\206\251\220\145\017\160\051
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL

CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Autoridad de Certificacion Raiz del Estado Venezolano"

Issuer: 1.2.840.1.13549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion

Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

Serial Number: 10 (0xa)

Subject: 1.2.840.1.13549.1.9.1=acraiz@suscerte.gob.ve,OU=Superintendencia de Servicios de Certificacion

Electronica,O=Sistema Nacional de Certificacion Electronica,ST=Distrito Capital,L=Caracas,C=VE,CN=Autoridad de Certificacion Raiz del Estado Venezolano

Not Valid Before: Tue Dec 28 16:41:36 2010

Not Valid After: Mon Dec 23 23:59:59 2030

Fingerprint (MD5): 96:14:69:08:a8:36:59:d7:a0:35:14:89:58:50:5b:ab

Fingerprint (SHA1): 39:8e:be:9c:0f:46:c0:79:c3:c7:af:e0:7a:2f:dd:9f:ae:5f:8a:5c

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridad de Certificacion Raiz del Estado Venezolano"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\071\216\276\234\017\106\300\171\303\307\257\340\172\057\335\237
\256\137\212\134
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\226\024\151\010\250\066\131\327\240\065\024\211\130\120\133\253
```

END

CKA_ISSUER MULTILINE_OCTAL

\060\202\001\036\061\076\060\074\006\003\125\004\003\023\065\101
\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164
\151\146\151\143\141\143\151\157\156\040\122\141\151\172\040\144
\145\154\040\105\163\164\141\144\157\040\126\145\156\145\172\157
\154\141\156\157\061\013\060\011\006\003\125\004\006\023\002\126
\105\061\020\060\016\006\003\125\004\007\023\007\103\141\162\141
\143\141\163\061\031\060\027\006\003\125\004\010\023\020\104\151
\163\164\162\151\164\157\040\103\141\160\151\164\141\154\061\066
\060\064\006\003\125\004\012\023\055\123\151\163\164\145\155\141
\040\116\141\143\151\157\156\141\154\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\156\040\105\154\145\143\164
\162\157\156\151\143\141\061\103\060\101\006\003\125\004\013\023
\072\123\165\160\145\162\151\156\164\145\156\144\145\156\143\151
\141\040\144\145\040\123\145\162\166\151\143\151\157\163\040\144
\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\040
\105\154\145\143\164\162\157\156\151\143\141\061\045\060\043\006
\011\052\206\110\206\367\015\001\011\001\026\026\141\143\162\141
\151\172\100\163\165\163\143\145\162\164\145\056\147\157\142\056
\166\145

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\012

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "China Internet Network Information Center EV Certificates Root"

Issuer: CN=China Internet Network Information Center EV Certificates

Root,O=China Internet Network Information Center,C=CN

Serial Number:48:9f:00:01

Subject: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network
Information Center,C=CN

Not Valid Before: Tue Aug 31 07:11:25 2010

Not Valid After: Sat Aug 31 07:11:25 2030

Fingerprint (MD5): 55:5d:63:00:97:bd:6a:97:f5:67:ab:4b:fb:6e:63:15

Fingerprint (SHA1): 4f:99:aa:93:fb:2b:d1:37:26:a1:99:4a:ce:7f:f0:05:f2:93:5d:1e

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "China Internet Network Information Center EV Certificates Root"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116
\061\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141
\040\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162
\153\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145
\156\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103
\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
\156\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164
\151\146\151\143\141\164\145\163\040\122\157\157\164

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116
\061\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141
\040\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162
\153\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145
\156\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103
\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
\156\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164
\151\146\151\143\141\164\145\163\040\122\157\157\164

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\004\110\237\000\001

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\003\367\060\202\002\337\240\003\002\001\002\002\004\110
\237\000\001\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\201\212\061\013\060\011\006\003\125\004\006\023\002
\103\116\061\062\060\060\006\003\125\004\012\014\051\103\150\151
\156\141\040\111\156\164\145\162\156\145\164\040\116\145\164\167
\157\162\153\040\111\156\146\157\162\155\141\164\151\157\156\040
\103\145\156\164\145\162\061\107\060\105\006\003\125\004\003\014
\076\103\150\151\156\141\040\111\156\164\145\162\156\145\164\040
\116\145\164\167\157\162\153\040\111\156\146\157\162\155\141\164
\151\157\156\040\103\145\156\164\145\162\040\105\126\040\103\145
\162\164\151\146\151\143\141\164\145\163\040\122\157\157\164\060
\036\027\015\061\060\060\070\063\061\060\067\061\061\062\065\132
\027\015\063\060\060\070\063\061\060\067\061\061\062\065\132\060
\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141\040
\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162\153
\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145\156
\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103\150
\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145\164
\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157\156

\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164\151
\146\151\143\141\164\145\163\040\122\157\157\164\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\233\176\163
\356\275\073\170\252\144\103\101\365\120\337\224\362\056\262\215
\112\216\106\124\322\041\022\310\071\062\102\006\351\203\325\237
\122\355\345\147\003\073\124\301\214\231\231\314\351\300\017\377
\015\331\204\021\262\270\321\313\133\334\036\371\150\061\144\341
\233\372\164\353\150\271\040\225\367\306\017\215\107\254\132\006
\335\141\253\342\354\330\237\027\055\234\312\074\065\227\125\161
\315\103\205\261\107\026\365\054\123\200\166\317\323\000\144\275
\100\231\335\314\330\333\304\237\326\023\137\101\203\213\371\015
\207\222\126\064\154\032\020\013\027\325\132\034\227\130\204\074
\204\032\056\134\221\064\156\031\137\177\027\151\305\145\357\153
\041\306\325\120\072\277\141\271\005\215\357\157\064\072\262\157
\024\143\277\026\073\233\251\052\375\267\053\070\146\006\305\054
\342\252\147\036\105\247\215\004\146\102\366\217\053\357\210\040
\151\217\062\214\024\163\332\053\206\221\143\042\232\362\247\333
\316\211\213\253\135\307\024\301\133\060\152\037\261\267\236\056
\201\001\002\355\317\226\136\143\333\250\346\070\267\002\003\001
\000\001\243\143\060\141\060\037\006\003\125\035\043\004\030\060
\026\200\024\174\162\113\071\307\300\333\142\245\117\233\252\030
\064\222\242\312\203\202\131\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004
\026\004\024\174\162\113\071\307\300\333\142\245\117\233\252\030
\064\222\242\312\203\202\131\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\003\202\001\001\000\052\303\307\103\067
\217\335\255\244\262\014\356\334\024\155\217\050\244\230\111\313
\014\200\352\363\355\043\146\165\175\305\323\041\147\171\321\163
\305\265\003\267\130\254\014\124\057\306\126\023\017\061\332\006
\347\145\073\035\157\066\333\310\035\371\375\200\006\312\243\075
\146\026\250\235\114\026\175\300\225\106\265\121\344\342\037\327
\352\006\115\143\215\226\214\357\347\063\127\102\072\353\214\301
\171\310\115\166\175\336\366\261\267\201\340\240\371\241\170\106
\027\032\126\230\360\116\075\253\034\355\354\071\334\007\110\367
\143\376\006\256\302\244\134\152\133\062\210\305\307\063\205\254
\146\102\107\302\130\044\231\341\345\076\345\165\054\216\103\326
\135\074\170\036\250\225\202\051\120\321\321\026\272\357\301\276
\172\331\264\330\314\036\114\106\341\167\261\061\253\275\052\310
\316\217\156\241\135\177\003\165\064\344\255\211\105\124\136\276
\256\050\245\273\077\170\171\353\163\263\012\015\375\276\311\367
\126\254\366\267\355\057\233\041\051\307\070\266\225\304\004\362
\303\055\375\024\052\220\231\271\007\314\237

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "China Internet Network Information Center EV Certificates Root"

Issuer: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network Information Center,C=CN

Serial Number:48:9f:00:01

Subject: CN=China Internet Network Information Center EV Certificates Root,O=China Internet Network Information Center,C=CN

Not Valid Before: Tue Aug 31 07:11:25 2010

Not Valid After: Sat Aug 31 07:11:25 2030

Fingerprint (MD5): 55:5d:63:00:97:bd:6a:97:f5:67:ab:4b:fb:6e:63:15

Fingerprint (SHA1): 4f:99:aa:93:fb:2b:d1:37:26:a1:99:4a:ce:7f:f0:05:f2:93:5d:1e

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL

CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "China Internet Network Information Center EV Certificates Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\117\231\252\223\373\053\321\067\046\241\231\112\316\177\360\005
\362\223\135\036

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\125\135\143\000\227\275\152\227\365\147\253\113\373\156\143\025

END

CKA_ISSUER MULTILINE_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\116
\061\062\060\060\006\003\125\004\012\014\051\103\150\151\156\141
\040\111\156\164\145\162\156\145\164\040\116\145\164\167\157\162
\153\040\111\156\146\157\162\155\141\164\151\157\156\040\103\145
\156\164\145\162\061\107\060\105\006\003\125\004\003\014\076\103
\150\151\156\141\040\111\156\164\145\162\156\145\164\040\116\145
\164\167\157\162\153\040\111\156\146\157\162\155\141\164\151\157
\156\040\103\145\156\164\145\162\040\105\126\040\103\145\162\164
\151\146\151\143\141\164\145\163\040\122\157\157\164

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\004\110\237\000\001

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Verizon Global Root CA"

```
# Issuer: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
# Serial Number: 1 (0x1)
# Subject: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
# Not Valid Before: Thu Jul 30 14:27:04 2009
# Not Valid After: Sun Jul 30 14:27:04 2034
# Fingerprint (MD5): f4:c3:f3:e9:53:c2:94:65:27:3d:52:89:f1:8e:5b:1c
# Fingerprint (SHA1): 91:21:98:ee:f2:3d:ca:c4:09:39:31:2f:ee:97:dd:56:0b:ae:49:b1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Verizon Global Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\165\060\202\002\135\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061\031
\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157\156
\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003\125
\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060\035
\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040\107
\154\157\142\141\154\040\122\157\157\164\040\103\101\060\036\027
\015\060\071\060\067\063\060\061\064\062\067\060\064\132\027\015
\063\064\060\067\063\060\061\064\062\067\060\064\132\060\134\061
\013\060\011\006\003\125\004\006\023\002\125\123\061\031\060\027
\006\003\125\004\012\014\020\126\145\162\151\172\157\156\040\102
\165\163\151\156\145\163\163\061\021\060\017\006\003\125\004\013
```

\014\010\117\155\156\151\122\157\157\164\061\037\060\035\006\003
\125\004\003\014\026\126\145\162\151\172\157\156\040\107\154\157
\142\141\154\040\122\157\157\164\040\103\101\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\212\000\014\160
\035\277\353\064\206\303\231\105\065\036\177\103\367\253\157\044
\055\315\031\302\020\273\260\312\051\133\251\040\253\253\162\054
\304\342\002\071\155\202\270\305\021\352\370\373\263\236\142\370
\063\036\260\037\311\343\366\067\333\004\310\073\143\117\066\342
\205\244\045\035\307\151\037\004\275\150\105\023\226\007\037\224
\120\365\076\305\047\124\236\300\111\127\104\216\007\143\324\246
\256\355\042\231\314\115\226\151\004\023\156\166\211\237\164\026
\224\371\035\124\275\242\271\322\203\001\042\014\115\104\200\252
\376\065\211\047\045\247\206\211\306\325\032\222\343\217\305\225
\240\024\162\232\350\126\305\002\125\034\227\371\040\056\320\365
\074\023\031\132\366\341\371\013\003\202\151\247\214\267\326\157
\234\126\076\235\350\052\011\140\155\113\346\373\213\231\024\367
\064\117\145\131\200\215\271\127\310\242\065\041\330\210\161\126
\135\356\202\127\055\046\220\030\237\232\234\234\217\357\324\305
\143\247\124\175\107\221\207\175\032\022\250\033\030\157\251\157
\261\047\272\344\004\164\316\067\036\177\146\305\002\003\001\000
\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004
\024\114\070\021\270\230\000\133\132\053\160\076\252\170\344\325
\147\147\147\247\176\060\015\006\011\052\206\110\206\367\015\001
\001\013\005\000\003\202\001\001\000\001\137\240\261\006\001\364
\171\327\145\030\140\076\317\171\240\272\302\043\117\043\337\207
\226\137\201\016\070\025\056\134\310\002\150\051\040\374\213\356
\245\212\030\201\144\134\230\065\176\071\060\202\244\202\212\120
\265\272\303\350\132\326\250\236\342\303\027\333\333\304\353\260
\012\040\015\351\236\343\377\140\124\107\361\073\235\324\050\074
\242\256\243\373\252\213\202\042\052\065\207\220\270\034\131\107
\220\325\235\056\372\111\343\145\250\066\353\307\344\034\150\334
\263\061\154\253\116\316\044\200\025\310\020\131\020\021\162\115
\172\234\230\234\304\374\141\340\263\262\235\116\240\306\302\131
\253\030\326\242\125\105\354\051\252\045\067\326\116\112\075\013
\100\301\344\223\344\374\315\221\013\370\346\253\314\263\166\304
\142\277\031\355\206\266\171\303\051\124\124\274\231\175\106\127
\317\246\317\364\124\052\232\003\145\107\001\241\102\052\313\045
\107\156\174\136\000\113\221\331\371\033\020\006\160\371\102\025
\246\137\252\327\100\036\375\311\110\235\227\201\352\134\150\302
\240\347\211\241\123\115\277\307\343

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "Verizon Global Root CA"
# Issuer: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
# Serial Number: 1 (0x1)
# Subject: CN=Verizon Global Root CA,OU=OmniRoot,O=Verizon Business,C=US
# Not Valid Before: Thu Jul 30 14:27:04 2009
# Not Valid After: Sun Jul 30 14:27:04 2034
#
Fingerprint (MD5): f4:c3:f3:e9:53:c2:94:65:27:3d:52:89:f1:8e:5b:1c
# Fingerprint (SHA1): 91:21:98:ee:f2:3d:ca:c4:09:39:31:2f:ee:97:dd:56:0b:ae:49:b1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Verizon Global Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\221\041\230\356\362\075\312\304\011\071\061\057\356\227\335\126
\013\256\111\261
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\364\303\363\351\123\302\224\145\047\075\122\211\361\216\133\034
END
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\031\060\027\006\003\125\004\012\014\020\126\145\162\151\172\157
\156\040\102\165\163\151\156\145\163\163\061\021\060\017\006\003
\125\004\013\014\010\117\155\156\151\122\157\157\164\061\037\060
\035\006\003\125\004\003\014\026\126\145\162\151\172\157\156\040
\107\154\157\142\141\154\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "SwissSign Silver Root CA - G3"
# Issuer: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH
# Serial Number:aa:88:b0:5a:0b:b1:76:9b
# Subject: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH
# Not Valid Before: Tue Aug 04 13:19:14 2009
# Not Valid After: Tue Aug 04 13:19:14 2037
# Fingerprint (MD5): 40:e4:e0:25:6e:96:e0:01:a1:c8:4c:43:4c:f9:dc:33
```

Fingerprint (SHA1): 8d:08:fc:43:c0:77:0c:a8:4f:4d:cc:b2:d4:1a:5d:95:6d:78:6d:c4

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Silver Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\252\210\260\132\013\261\166\233
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\176\060\202\003\146\240\003\002\001\002\002\011\000
\252\210\260\132\013\261\166\233\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\114\061\013\060\011\006\003\125
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\046\060
\044\006\003\125\004\003\023\035\123\167\151\163\163\123\151\147
\156\040\123\151\154\166\145\162\040\122\157\157\164\040\103\101
\040\055\040\107\063\060\036\027\015\060\071\060\070\060\064\061
\063\061\071\061\064\132\027\015\063\067\060\070\060\064\061\063
\061\071\061\064\132\060\114\061\013\060\011\006\003\125\004\006
\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014\123
\167\151\163\163\123\151\147\156\040\101\107\061\046\060\044\006
\003\125\004\003\023\035\123\167\151\163\163\123\151\147\156\040
\123\151\154\166\145\162\040\122\157\157\164\040\103\101\040\055
\040\107\063\060\202\002\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002
\202\002\001\000\276\207\233\005\346\161\174\122\157\155\354\067
\251\351\263\334\314\137\177\323\120\352\041\233\004\360\075\277
\276\216\311\245\024\026\062\020\317\231\374\354\160\255\110\066
\147\044\014\027\062\326\051\345\112\071\261\067\353\246\170\014
\154\157\031\312\116\367\121\332\032\350\372\041\070\154\225\234
```

\057\326\213\314\073\002\233\277\046\233\021\105\266\270\064\132
\035\246\124\110\122\310\235\170\161\316\110\112\314\247\170\203
\334\150\253\146\036\167\007\323\066\030\010\327\324\155\140\370
\360\171\323\063\066\011\222\143\267\004\232\365\247\226\332\105
\257\164\032\374\202\343\250\133\016\072\077\122\127\230\176\274
\234\214\301\300\262\132\337\304\176\376\014\246\124\166\203\176
\272\335\347\052\364\112\066\117\207\145\056\245\272\071\215\131
\141\051\363\323\216\044\160\214\123\233\021\245\107\007\262\165
\005\134\015\204\331\104\331\315\311\046\104\127\156\002\175\225
\001\324\253\044\206\356\075\160\373\127\372\260\051\024\320\235
\362\305\227\313\011\312\361\362\075\347\330\113\226\351\210\057
\236\107\121\212\124\145\230\110\322\022\344\124\167\014\007\346
\276\133\234\361\335\003\176\215\204\374\276\311\142\325\374\311
\072\350\211\265\137\302\005\122\141\360\234\076\354\056\115\214
\162\221\216\310\103\301\242\050\136\365\200\044\334\342\057\207
\073\123\000\345\313\360\262\174\215\171\031\240\210\315\170\370
\305\212\132\167\345\006\254\335\112\336\346\160\156\276\257\276
\365\261\253\016\010\260\333\240\077\224\305\276\022\271\274\173
\047\171\265\062\051\135\256\305\040\043\222\003\173\124\071\260
\211\042\124\155\022\343\303\170\352\072\100\375\244\223\254\351
\055\210\074\333\246\107\146\114\337\330\027\355\026\336\032\326
\327\101\146\277\035\200\361\244\340\144\021\051\136\014\047\005
\142\353\345\304\004\142\321\304\237\014\152\125\326\130\070\234
\146\017\235\373\253\124\200\231\234\354\111\326\202\237\332\105
\326\077\123\006\003\267\375\037\354\206\175\164\340\244\264\350
\062\266\252\007\043\370\357\044\101\236\143\060\170\364\124\335
\216\360\132\070\216\022\177\170\307\157\002\126\041\063\316\270
\270\255\151\125\002\003\001\000\001\243\143\060\141\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035
\006\003\125\035\016\004\026\004\024\241\214\105\223\012\022\143
\013\247\127\137\062\112\175\341\041\347\267\076\146\060\037\006
\003\125\035\043\004\030\060\026\200\024\241\214\105\223\012\022
\143\013\247\127\137\062\112\175\341\041\347\267\076\146\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002
\001\000\207\256\141\155\110\070\052\306\034\334\112\056\204\170
\111\300\043\052\105\270\065\115\321\005\372\271\005\063\304\144
\275\333\255\124\026\052\260\076\015\132\050\332\246\032\200\163
\014\304\101\157\257\270\064\266\167\324\133\216\035\013\213\106
\220\104\265\263\356\111\030\211\301\113\064\263\207\065\164\242
\236\105\147\355\105\161\146\266\271\241\045\163\327\302\254\210
\373\322\035\247\153\332\300\132\346\330\131\144\064\227\145\040
\061\063\003\117\316\255\011\236\256\351\302\076\030\165\264\063
\045\022\273\005\354\120\272\161\100\342\275\336\210\106\005\041
\204\213\243\053\036\353\060\060\211\277\021\365\134\104\370\221
\213\113\131\105\013\060\015\312\014\117\157\143\276\004\376\301
\355\340\207\376\310\315\126\277\345\334\216\172\324\326\051\116
\200\333\253\233\077\216\145\007\042\367\104\315\226\037\055\307

```
\365\011\266\230\160\377\070\334\120\025\021\204\073\177\251\360
\330\044\124\310\027\214\053\023\111\326\231\177\105\321\017\216
\277\151\162\067\123\007\364\346\256\375\133\076\171\271\006\315
\270\201\170\264\115\240\320\065\272\344\256\377\323\111\274\065
\355\143\306\263\374\343\253\141\132\005\266\013\344\377\251\052
\276\337\124\116\302\113\134\150\332\243\062\242\311\115\127\030
\123\064\131\074\146\231\327\074\002\170\247\114\161\320\277\333
\361\304\074\347\001\346\004\362\104\366\110\046\060\063\311\261
\001\031\353\002\361\314\041\372\072\002\060\027\235\310\137\200
\077\335\045\254\002\233\343\027\336\275\312\222\024\322\122\201
\123\346\352\374\060\147\062\251\142\366\223\027\025\007\061\136
\017\033\151\365\364\251\267\174\055\263\355\204\104\062\107\050
\007\073\206\151\105\251\307\066\226\220\162\164\330\022\246\163
\043\321\116\271\266\172\072\304\051\241\120\006\021\271\331\364
\046\156\142\010\022\040\026\360\001\127\027\324\005\066\147\227
\353\121\371\377\063\044\014\005\017\126\277\357\075\034\122\216
\212\336\151\017\132\037\360\325\003\061\104\263\222\306\352\165
\250\256\273\307\140\003\210\230\377\307\004\204\122\220\206\341
\264\223\251\120\057\350\353\322\066\254\060\140\247\320\003\023
\265\012
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SwissSign Silver Root CA - G3"

Issuer: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH

Serial Number:aa:88:b0:5a:0b:b1:76:9b

Subject: CN=SwissSign Silver Root CA - G3,O=SwissSign AG,C=CH

Not Valid Before: Tue Aug 04 13:19:14 2009

Not Valid After: Tue Aug 04 13:19:14 2037

Fingerprint

(MD5): 40:e4:e0:25:6e:96:e0:01:a1:c8:4c:43:4c:f9:dc:33

Fingerprint (SHA1): 8d:08:fc:43:c0:77:0c:a8:4f:4d:cc:b2:d4:1a:5d:95:6d:78:6d:c4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SwissSign Silver Root CA - G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\215\010\374\103\300\167\014\250\117\115\314\262\324\032\135\225
\155\170\155\304
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\100\344\340\045\156\226\340\001\241\310\114\103\114\371\334\063
```

END


```
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\046\060\044\006\003\125\004\003\023
\035\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145
\162\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\252\210\260\132\013\261\166\233
END
CKA_TRUST_SERVER_AUTH CK_TRUST
CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "SwissSign Platinum Root CA - G3"
# Issuer: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
# Serial Number:22:3f:a9:17:20:de:81:94
# Subject: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
# Not Valid Before: Tue Aug 04 13:34:04 2009
# Not Valid After: Tue Aug 04 13:34:04 2037
# Fingerprint (MD5): 20:de:12:0b:a8:6e:d9:34:a8:4e:b2:0d:1e:a6:43:39
# Fingerprint (SHA1): a1:e7:c6:00:aa:41:70:e5:b7:4b:c9:4f:9b:97:03:ed:c2:61:b4:b9
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Platinum Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
```

```
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

\002\010\042\077\251\027\040\336\201\224

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\201\060\202\003\151\240\003\002\001\002\002\010\042
\077\251\027\040\336\201\224\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\116\061\013\060\011\006\003\125\004
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014
\123\167\151\163\163\123\151\147\156\040\101\107\061\050\060\046
\006\003\125\004\003\023\037\123\167\151\163\163\123\151\147\156
\040\120\154\141\164\151\156\165\155\040\122\157\157\164\040\103
\101\040\055\040\107\063\060\036\027\015\060\071\060\070\060\064
\061\063\063\064\060\064\132\027\015\063\067\060\070\060\064\061
\063\063\064\060\064\132\060\116\061\013\060\011\006\003\125\004
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014
\123\167\151\163\163\123\151\147\156\040\101\107\061\050\060\046
\006\003\125\004\003\023\037\123\167\151\163\163\123\151\147\156
\040\120\154\141\164\151\156\165\155\040\122\157\157\164\040\103
\101\040\055\040\107\063\060\202\002\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202
\002\012\002\202\002\001\000\224\240\357\023\033\237\104\040\033
\315\305\252\042\273\331\362\122\076\172\132\130\167\346\215\241
\053\311\334\244\363\344\263\023\224\000\142\233\034\362\103\120
\103\201\176\257\060\066\111\254\030\211\014\030\105\270\076\307
\124\155\343\330\232\131\153\212\032\045\251\266\265\015\267\175
\043\360\137\175\250\007\251\367\076\206\056\310\001\115\334\346
\066\355\035\345\067\007\151\022\113\343\203\321\004\034\044\360
\037\160\161\347\031\355\163\110\156\225\053\025\266\126\346\002
\337\126\351\233\372\352\246\356\340\302\303\272\340\314\306\310
\173\327\157\072\225\233\072\217\276\133\054\322\251\240\070\076
\326\210\341\261\142\023\216\334\253\060\147\315\250\152\246\143
\053\202\260\313\307\075\116\355\162\366\175\253\062\116\145\002
\353\017\231\164\370\034\032\050\214\016\105\000\223\054\024\237
\155\307\033\236\366\212\334\173\170\343\264\224\107\035\115\005
\155\204\172\220\124\262\236\213\165\302\200\337\207\071\077\237
\373\110\124\007\215\240\051\365\371\140\137\132\162\350\273\233
\240\102\340\010\000\064\243\025\074\023\343\326\032\153\002\262
\224\041\243\235\101\274\052\153\116\063\073\246\224\070\374\075
\307\053\063\263\056\053\006\164\254\233\020\157\305\116\105\367
\135\241\126\003\054\015\137\172\275\036\336\035\167\220\153\332
\245\055\212\114\351\337\101\364\347\113\354\175\225\102\237\114
\251\011\017\103\210\077\075\223\347\053\364\172\110\332\150\304
\335\022\200\061\032\135\044\124\046\246\044\041\263\114\255\332
\027\010\066\002\127\306\234\206\160\311\165\311\236\174\141\330
\170\346\271\350\024\151\371\034\020\050\022\135\113\165\120\272
\074\320\147\160\125\125\126\113\373\075\034\330\333\171\115\227
\337\270\236\333\027\054\325\065\007\270\120\251\367\216\367\126
\377\172\147\103\117\040\331\312\146\326\070\140\113\356\224\061
\326\015\242\110\233\377\064\151\224\306\065\365\226\210\357\252

\146\314\201\246\353\114\123\377\062\164\247\266\235\230\127\264
\272\046\251\361\063\063\142\176\072\260\003\021\127\377\334\157
\021\043\255\076\306\012\320\314\124\267\055\302\223\035\345\302
\246\214\307\330\357\123\367\002\003\001\000\001\243\143\060\141
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\035\006\003\125\035\016\004\026\004\024\126\052\077\220
\130\364\027\132\024\262\327\010\033\205\133\124\152\124\032\050
\060\037\006\003\125\035\043\004\030\060\026\200\024\126\052\077
\220\130\364\027\132\024\262\327\010\033\205\133\124\152\124\032
\050\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\003\202\002\001\000\154\355\212\347\103\250\171\047\233\270\317
\207\076\144\070\030\214\021\102\222\206\067\340\130\303\033\356
\004\056\367\204\354\203\020\150\014\177\170\055\234\302\227\216
\066\116\026\330\016\352\153\110\255\117\236\135\015\314\015\251
\076\030\205\176\314\150\231\071\065\326\330\237\206\301\062\373
\115\145\263\042\024\113\310\205\146\332\027\377\161\221\254\234
\126\127\336\161\054\126\102\277\370\315\016\360\242\323\377\322
\042\025\373\320\170\012\176\341\260\132\316\216\067\333\251\236
\347\225\317\143\362\054\015\322\372\157\363\310\325\373\000\267
\367\065\147\020\323\173\122\354\020\062\370\277\335\136\311\246
\202\244\361\260\277\035\056\335\045\344\275\115\360\065\251\221
\001\107\370\020\002\224\133\353\076\353\015\272\325\035\143\054
\245\056\253\347\343\036\243\356\113\252\137\261\146\001\264\202
\132\371\106\113\307\361\370\337\054\276\375\165\335\226\070\232
\067\072\156\245\346\062\025\156\263\220\300\071\212\164\245\225
\240\276\015\056\211\171\315\051\126\216\303\136\127\121\304\005
\157\004\125\217\201\351\114\275\131\106\313\052\274\115\311\035
\362\306\117\005\344\310\004\015\367\156\117\332\303\072\234\322
\302\365\351\306\044\172\024\076\034\102\060\250\002\105\061\251
\374\120\251\334\334\206\070\017\133\223\077\177\010\116\152\015
\047\072\020\171\126\303\025\270\076\006\206\366\331\160\147\257
\165\172\213\342\130\314\306\165\117\062\125\305\154\024\011\050
\073\362\225\344\152\336\054\050\007\255\240\175\007\050\335\324
\132\243\351\246\174\023\214\231\013\122\170\333\331\321\337\076
\132\103\166\177\106\140\123\302\315\347\166\107\174\125\315\264
\071\144\020\133\225\113\065\135\104\203\044\325\340\056\044\014
\301\200\156\151\000\200\006\167\012\146\202\020\014\121\157\067
\211\127\333\363\114\345\270\271\356\043\146\227\140\267\122\335
\331\226\373\272\212\073\240\115\316\136\360\104\114\220\314\041
\117\033\072\230\153\216\061\203\371\203\010\122\313\031\301\065
\153\356\241\025\133\210\077\155\254\362\064\222\123\246\060\052
\023\327\346\206\250\135\331\102\322\307\235\251\172\213\313\337
\356\242\061\302\345

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "SwissSign Platinum Root CA - G3"
# Issuer: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
# Serial Number:22:3f:a9:17:20:de:81:94
# Subject: CN=SwissSign Platinum Root CA - G3,O=SwissSign AG,C=CH
# Not Valid Before: Tue Aug 04 13:34:04 2009
# Not Valid After: Tue Aug 04 13:34:04 2037
#
# Fingerprint (MD5): 20:de:12:0b:a8:6e:d9:34:a8:4e:b2:0d:1e:a6:43:39
# Fingerprint (SHA1): a1:e7:c6:00:aa:41:70:e5:b7:4b:c9:4f:9b:97:03:ed:c2:61:b4:b9
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Platinum Root CA - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\241\347\306\000\252\101\160\345\267\113\311\117\233\227\003\355
\302\141\264\271
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\040\336\022\013\250\156\331\064\250\116\262\015\036\246\103\071
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\050\060\046\006\003\125\004\003\023
\037\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\042\077\251\027\040\336\201\224
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "SwissSign Gold Root CA - G3"
# Issuer: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH
# Serial Number:de:c4:f2:44:f3:1d:a6:fc
# Subject: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH
# Not Valid Before: Tue Aug 04 13:31:47 2009
# Not Valid After: Tue Aug 04 13:31:47 2037
# Fingerprint (MD5): c2:64:4c:e2:7d:eb:6c:7b:ec:36:e0:39:df:68:9c:67
```

Fingerprint (SHA1): 0b:71:99:a1:c7:f3:ad:df:7b:a7:ea:b8:eb:57:4a:e8:0d:60:dd:de

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Gold Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\122\157\157\164\040\103\101\040\055\040\107\063

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\011\000\336\304\362\104\363\035\246\374

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\172\060\202\003\142\240\003\002\001\002\002\011\000
\336\304\362\104\363\035\246\374\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\060\112\061\013\060\011\006\003\125
\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023
\014\123\167\151\163\163\123\151\147\156\040\101\107\061\044\060
\042\006\003\125\004\003\023\033\123\167\151\163\163\123\151\147
\156\040\107\157\154\144\040\122\157\157\164\040\103\101\040\055
\040\107\063\060\036\027\015\060\071\060\070\060\064\061\063\063
\061\064\067\132\027\015\063\067\060\070\060\064\061\063\063\061
\064\067\132\060\112\061\013\060\011\006\003\125\004\006\023\002
\103\110\061\025\060\023\006\003\125\004\012\023\014\123\167\151
\163\163\123\151\147\156\040\101\107\061\044\060\042\006\003\125
\004\003\023\033\123\167\151\163\163\123\151\147\156\040\107\157
\154\144\040\122\157\157\164\040\103\101\040\055\040\107\063\060
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000
\303\350\237\310\145\132\235\147\033\301\105\227\264\264\207\103
\133\141\140\200\236\362\177\136\371\147\104\335\104\372\253\265
\253\167\377\052\031\114\316\157\304\217\101\237\340\342\315\162
\340\321\324\122\141\101\011\012\277\012\160\373\340\203\151\141
\051\312\333\042\232\133\245\346\335\027\225\260\157\204\216\072

\076\144\132\101\373\033\130\374\375\053\076\262\244\346\254\311
\202\274\316\366\225\370\227\167\355\046\366\130\256\236\047\342
\017\203\354\305\066\130\310\173\317\325\207\241\251\207\032\023
\147\141\001\155\246\151\234\342\220\361\053\150\145\363\350\260
\174\374\202\075\336\255\330\012\000\011\104\171\023\234\360\376
\156\165\173\302\274\263\131\001\013\174\305\325\055\360\277\377
\155\127\322\111\201\353\264\263\120\254\133\371\013\025\025\214
\151\377\243\071\001\355\374\334\334\047\227\216\173\213\325\152
\246\326\340\035\137\315\001\221\346\365\042\230\272\056\011\030
\070\157\023\250\201\322\373\041\067\347\055\264\142\347\201\220
\260\306\171\131\267\147\165\376\276\217\073\372\066\354\257\255
\322\117\164\066\001\345\127\253\043\004\314\112\136\227\317\176
\306\357\214\314\225\043\151\215\313\070\307\031\366\326\212\000
\024\036\064\075\157\332\014\013\303\272\227\374\021\113\122\141
\076\277\063\147\123\020\277\170\033\011\302\107\272\036\257\130
\365\165\201\177\275\126\361\353\126\327\331\151\014\007\351\067
\061\260\022\034\062\357\126\331\276\172\053\174\275\323\075\274
\152\063\115\072\074\120\020\207\047\307\172\012\147\123\333\177
\200\233\350\236\043\372\371\010\072\213\241\216\064\132\110\063
\137\144\323\227\206\007\031\175\210\224\316\052\174\305\152\337
\257\274\251\237\315\072\246\272\273\124\371\177\217\337\317\016
\132\304\255\232\274\263\072\167\163\203\114\223\074\220\150\265
\174\120\225\021\310\202\136\224\161\320\101\030\373\311\306\145
\354\316\211\266\316\042\263\021\133\077\340\235\076\033\030\150
\015\252\003\241\147\131\277\153\235\274\370\362\145\057\232\101
\072\105\330\136\320\066\154\157\073\036\143\264\216\230\114\023
\333\041\016\237\173\355\352\240\252\161\303\353\243\240\322\045
\002\003\001\000\001\243\143\060\141\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\134\227\006\106\064\253\337\060\305\174\305
\015\125\161\146\060\265\140\217\236\060\037\006\003\125\035\043
\004\030\060\026\200\024\134\227\006\106\064\253\337\060\305\174
\305\015\125\161\146\060\265\140\217\236\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\167\113
\115\336\352\205\112\253\054\047\326\105\307\361\137\040\301\133
\140\355\007\313\242\063\334\066\317\307\224\361\006\307\325\332
\317\315\255\204\076\377\022\110\177\101\350\245\146\127\060\304
\035\344\247\032\057\055\102\301\357\106\163\262\325\365\132\375
\016\172\153\322\310\061\243\015\110\226\127\145\143\125\030\300
\374\344\212\314\230\206\133\253\014\212\047\067\372\043\150\131
\134\046\327\241\301\302\271\116\054\377\051\136\346\224\013\276
\315\162\117\225\350\217\366\367\270\076\136\316\317\236\021\311
\254\003\051\110\212\251\266\246\064\271\254\100\377\304\266\163
\067\261\307\177\251\121\333\113\052\107\137\100\044\007\210\006
\267\044\263\373\177\367\260\213\063\372\277\043\165\243\134\376
\252\145\032\302\276\361\175\201\167\003\201\261\215\327\225\015
\172\074\102\230\267\217\251\175\120\341\337\122\006\232\240\122

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\124\170\203\007\141\122\011\067\136\212\234\247\306\121\321\134
\143\321\204\334\302\333\322\372\133\030\066\175\146\274\324\050
\227\057\165\226\034\204\007\254\213\216\123\021\276\044\041\252
\147\362\301\255\210\234\323\260\170\147\170\365\323\130\003\040
\012\135\040\361\265\347\145\314\016\040\343\325\337\346\057\031
\053\205\150\301\004\046\317\217\355\005\123\241\335\007\016\353
\101\046\307\264\251\054\133\343\151\075\146\300\142\033\300\252
\206\300\067\303\061\004\206\160\071\276\153\137\041\100\101\240
\177\345\331\017\070\113\160\137\111\370\205\270\053\056\252\037
\223\101\103\370\373\262\164\074\037\113\127\133\267\324\121\241
\222\112\316\276\020\242\356\330\024\042\173\271\101\275\215\351
\210\251\321\217\003\032\140\377\077\207\211\240\231\047\042\146
\260\076\150\236\162\210\121\070\235\023\076\105\155\005\345\106
\265\163\355\103\206\261\024\012\036\274\332\015\277\036\044\134
\146\217\016\276\241\375\306\353\151\274\103\171\327\003\166\371
\334\207\231\270\230\304\315\177\155\020\371\020\276\054\102\376
\234\051\115\203\153\012\275\265\216\304\110\212\375\041\007\246
\200\175\037\233\351\253\275\202\141\104\012\161\047\137\155\233
\220\236\256\377\066\044\263\150\003\326\225\214\153\163
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SwissSign Gold Root CA - G3"

Issuer: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH

Serial Number:de:c4:f2:44:f3:1d:a6:fc

Subject: CN=SwissSign Gold Root CA - G3,O=SwissSign AG,C=CH

Not Valid Before: Tue Aug 04 13:31:47 2009

Not Valid After: Tue Aug 04 13:31:47 2037

Fingerprint (MD5): c2:64:4c:e2:7d:eb:6c:7b:ec:36:e0:39:df:68:9c:67

Fingerprint

(SHA1): 0b:71:99:a1:c7:f3:ad:df:7b:a7:ea:b8:eb:57:4a:e8:0d:60:dd:de

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SwissSign Gold Root CA - G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\013\161\231\241\307\363\255\337\173\247\352\270\353\127\112\350
\015\140\335\336
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\302\144\114\342\175\353\154\173\354\066\340\071\337\150\234\147
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\044\060\042\006\003\125\004\003\023
\033\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040
\122\157\157\164\040\103\101\040\055\040\107\063
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\011\000\336\304\362\104\363\035\246\374
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING

CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "SITHS CA v3"

Issuer: CN=SITHS CA v3,O=Carelink,C=SE

Serial Number: 1b:d4:0e:d4:34:d1:da:15:a6:00:30:15:02:4d:a4:6c

Subject: CN=SITHS CA v3,O=Carelink,C=SE

Not Valid Before: Mon Nov 28 10:27:50 2005

Not Valid After: Sat Nov 28 06:02:38 2015

Fingerprint (MD5): 51:c6:bb:37:df:2c:7b:55:0f:84:d4:f3:68:5a:be:eb

Fingerprint (SHA1): 16:d8:66:35:af:13:41:cd:34:79:94:45:eb:60:3e:27:37:02:96:5d

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SITHS CA v3"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124
\110\123\040\103\101\040\166\063
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124
\110\123\040\103\101\040\166\063
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\033\324\016\324\064\321\332\025\246\000\060\025\002\115
\244\154
```

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\141\060\202\002\111\240\003\002\001\002\002\020\033
\324\016\324\064\321\332\025\246\000\060\025\002\115\244\154\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\066
\061\013\060\011\006\003\125\004\006\023\002\123\105\061\021\060
\017\006\003\125\004\012\014\010\103\141\162\145\154\151\156\153
\061\024\060\022\006\003\125\004\003\014\013\123\111\124\110\123
\040\103\101\040\166\063\060\036\027\015\060\065\061\061\062\070
\061\060\062\067\065\060\132\027\015\061\065\061\061\062\070\060
\066\060\062\063\070\132\060\066\061\013\060\011\006\003\125\004
\006\023\002\123\105\061\021\060\017\006\003\125\004\012\014\010
\103\141\162\145\154\151\156\153\061\024\060\022\006\003\125\004
\003\014\013\123\111\124\110\123\040\103\101\040\166\063\060\202
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\305
\331\133\321\324\053\177\100\147\356\241\133\135\321\332\152\271
\031\061\362\360\046\111\001\145\374\101\124\361\226\221\354\052
\356\004\104\044\036\100\234\347\027\120\077\352\034\174\356\270
\067\071\374\307\323\257\233\156\135\337\076\276\005\374\352\312
\331\371\105\126\341\225\234\261\320\132\217\376\310\052\246\327
\152\154\340\155\135\354\134\166\376\341\231\107\232\251\173\247
\352\346\157\124\002\047\115\121\116\050\075\254\006\072\201\202
\246\034\275\113\244\355\122\022\334\212\052\353\047\364\301\042
\112\020\204\132\165\265\200\042\126\145\353\314\200\362\245\341
\144\276\174\336\017\275\047\007\114\051\133\252\261\357\264\173
\377\207\064\350\243\223\102\313\075\140\273\167\323\302\057\136
\024\370\163\157\244\177\240\234\001\325\325\251\273\014\127\217
\314\300\073\221\170\236\222\071\171\062\114\104\177\307\013\175
\336\372\314\176\332\314\336\015\324\146\266\142\246\063\277\154
\371\325\335\107\122\160\224\313\145\340\105\267\015\327\257\225
\110\327\101\243\073\040\120\015\074\024\125\223\314\352\015\002
\003\001\000\001\243\153\060\151\060\022\006\003\125\035\023\001
\001\377\004\010\060\006\001\001\377\002\001\000\060\021\006\011
\140\206\110\001\206\370\102\001\001\004\004\003\002\002\004\060
\024\006\003\125\035\040\004\015\060\013\060\011\006\007\052\205
\160\112\001\001\003\060\013\006\003\125\035\017\004\004\003\002
\001\006\060\035\006\003\125\035\016\004\026\004\024\174\056\071
\043\062\104\350\017\116\146\362\015\050\376\100\276\302\266\342
\240\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\010\123\132\210\051\015\365\124\330\253\261
\203\271\047\151\132\252\137\053\130\111\324\271\337\157\353\307
\006\353\375\207\232\277\312\022\337\172\236\001\042\045\143\122
\205\157\247\057\016\227\164\140\214\340\110\200\163\335\102\215
\041\355\017\162\177\164\006\156\120\126\073\055\207\354\201\130
\213\066\307\312\000\373\244\004\266\057\070\130\216\167\361\006
\304\055\054\047\055\030\202\013\212\137\042\224\024\025\143\070
\306\245\261\272\340\254\276\076\046\077\221\273\034\203\374\016
\312\311\067\276\067\327\360\173\363\214\330\274\220\013\364\000

```
\277\124\274\152\112\130\347\312\133\014\031\123\102\007\225\127
\065\270\117\226\123\232\250\230\335\116\175\125\264\234\343\272
\300\066\271\267\334\002\230\370\366\345\060\276\054\167\262\363
\311\342\002\243\346\367\104\174\326\152\177\320\170\276\071\163
\370\013\302\037\122\000\016\115\173\306\012\356\142\313\011\325
\017\012\060\207\202\223\274\312\021\244\037\011\372\372\067\120
\354\073\342\074\044\240\200\050\314\373\246\335\357\067\232\251
\061\335\337\352\121
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SITHS CA v3"

Issuer: CN=SITHS CA v3,O=Carelink,C=SE

Serial Number: 1b:d4:0e:d4:34:d1:da:15:a6:00:30:15:02:4d:a4:6c

Subject: CN=SITHS CA v3,O=Carelink,C=SE

Not Valid Before: Mon Nov 28 10:27:50 2005

Not Valid After: Sat Nov 28 06:02:38 2015

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Fingerprint (SHA1): 16:d8:66:35:af:13:41:cd:34:79:94:45:eb:60:3e:27:37:02:96:5d

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SITHS CA v3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\026\330\146\065\257\023\101\315\064\171\224\105\353\140\076\047
\067\002\226\135
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\121\306\273\067\337\054\173\125\017\204\324\363\150\132\276\353
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\066\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\021\060\017\006\003\125\004\012\014\010\103\141\162\145\154\151
\156\153\061\024\060\022\006\003\125\004\003\014\013\123\111\124
\110\123\040\103\101\040\166\063
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\033\324\016\324\064\321\332\025\246\000\060\025\002\115
\244\154
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Certinomis - Autorité Racine"
Issuer: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR
Serial Number: 1 (0x1)
Subject: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR
Not Valid Before: Wed Sep 17 08:28:59 2008
Not Valid After: Sun Sep 17 08:28:59 2028
Fingerprint (MD5): 7f:30:78:8c:03:e3:ca:c9:0a:e2:c9:ea:1e:aa:55:1a
#

Fingerprint (SHA1): 2e:14:da:ec:28:f0:fa:1e:8e:38:9a:4e:ab:eb:26:c0:0a:d3:83:c3

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certinomis - Autorité Racine"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
END

CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
END

CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END

CKA_VALUE MULTILINE_OCTAL
\060\202\005\234\060\202\003\204\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061\023
\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156\157
\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060\060

\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060\044
\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155\151
\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122\141
\143\151\156\145\060\036\027\015\060\070\060\071\061\067\060\070
\062\070\065\071\132\027\015\062\070\060\071\061\067\060\070\062
\070\065\071\132\060\143\061\013\060\011\006\003\125\004\006\023
\002\106\122\061\023\060\021\006\003\125\004\012\023\012\103\145
\162\164\151\156\157\155\151\163\061\027\060\025\006\003\125\004
\013\023\016\060\060\060\062\040\064\063\063\071\071\070\071\060
\063\061\046\060\044\006\003\125\004\003\014\035\103\145\162\164
\151\156\157\155\151\163\040\055\040\101\165\164\157\162\151\164
\303\251\040\122\141\143\151\156\145\060\202\002\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017
\000\060\202\002\012\002\202\002\001\000\235\205\237\206\323\343
\257\307\262\153\156\063\340\236\267\102\064\125\235\371\201\276
\143\330\043\166\016\227\124\315\231\114\032\361\071\307\210\330
\027\120\014\236\141\332\300\116\125\336\347\132\270\172\116\167
\207\015\345\270\353\372\236\136\173\036\304\317\050\164\307\223
\365\024\306\042\050\004\371\221\303\253\047\163\152\016\056\115
\363\056\050\037\160\337\125\057\116\355\307\161\157\011\162\056
\355\325\062\227\320\361\130\167\321\140\274\116\136\333\232\204
\366\107\141\105\053\366\120\246\177\152\161\047\110\204\065\236
\254\376\151\251\236\172\136\065\045\372\264\247\111\065\167\226
\247\066\133\341\315\337\043\160\330\135\114\245\010\203\361\246
\044\070\023\250\354\057\250\241\147\307\246\055\206\107\356\212
\374\354\233\016\164\364\053\111\002\173\220\165\214\374\231\071
\001\071\326\112\211\345\236\166\253\076\226\050\070\046\213\335
\215\214\300\366\001\036\157\245\061\022\070\175\225\302\161\356
\355\164\256\344\066\242\103\165\325\361\000\233\342\344\327\314
\102\003\113\170\172\345\175\273\270\256\056\040\223\323\344\141
\337\161\341\166\147\227\077\266\337\152\163\132\144\042\345\102
\333\317\201\003\223\330\364\343\020\340\162\366\000\160\254\360
\301\172\017\005\177\317\064\151\105\265\223\344\031\333\122\026
\043\005\211\016\215\110\344\045\157\263\170\277\142\365\007\372
\225\044\302\226\262\350\243\043\302\135\003\374\303\323\345\174
\311\165\043\327\364\365\274\336\344\337\315\200\277\221\210\175
\247\023\264\071\272\054\272\275\321\153\314\363\245\050\355\104
\236\175\122\243\157\226\056\031\176\034\363\133\307\026\216\273
\140\175\167\146\107\124\202\000\021\140\154\062\301\250\070\033
\353\156\230\023\326\356\070\365\360\237\016\357\376\061\201\301
\322\044\225\057\123\172\151\242\360\017\206\105\216\130\202\053
\114\042\324\136\240\347\175\046\047\110\337\045\106\215\112\050
\174\206\236\371\233\032\131\271\145\277\005\335\266\102\135\075
\346\000\110\202\136\040\367\021\202\336\312\330\237\346\067\107
\046\036\353\170\367\141\303\101\144\130\002\101\371\332\340\321
\370\371\350\375\122\070\266\365\211\337\002\003\001\000\001\243
\133\060\131\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004

\003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\015
\214\266\141\332\104\270\321\024\175\303\276\175\136\110\360\316
\312\152\260\060\027\006\003\125\035\040\004\020\060\016\060\014
\006\012\052\201\172\001\126\002\002\000\001\001\060\015\006\011
\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000
\044\076\140\006\176\035\357\072\076\333\352\257\034\232\054\001
\013\364\305\265\331\111\061\364\135\101\215\211\014\116\377\154
\242\375\377\342\006\310\071\237\361\132\251\335\042\130\025\250
\212\323\261\346\062\011\202\003\154\327\077\010\307\370\271\272
\000\155\271\326\374\122\062\135\244\177\244\061\224\273\266\114
\070\177\050\060\065\377\237\043\123\267\266\356\024\160\000\100
\053\332\107\253\064\176\136\247\126\060\141\053\213\103\254\375
\266\210\050\365\153\266\076\140\112\272\102\220\064\147\215\352
\353\137\105\124\073\027\254\213\344\306\145\017\356\320\214\135
\146\071\316\062\247\330\020\227\300\176\064\234\237\224\363\366
\206\037\317\033\163\255\224\171\207\150\160\303\063\245\160\347
\330\325\070\224\157\143\171\353\277\012\016\010\347\305\057\017
\102\240\053\024\100\377\041\340\005\305\047\341\204\021\023\272
\326\206\035\101\013\023\043\211\323\311\013\350\212\272\172\243
\243\163\067\065\200\175\022\270\063\167\100\070\300\372\136\060
\322\362\266\243\261\326\242\225\227\201\233\122\355\151\114\377
\200\344\123\333\124\133\003\155\124\137\261\270\357\044\275\157
\237\021\303\307\144\302\017\050\142\205\146\136\032\173\262\267
\357\256\065\311\031\063\250\270\047\333\063\125\277\150\341\165
\110\104\126\373\315\323\110\273\107\211\072\254\151\365\200\306
\344\104\120\057\124\304\252\103\305\061\061\130\275\226\305\352
\165\154\232\165\261\115\370\367\227\377\226\026\362\227\115\350
\366\363\021\371\072\175\212\070\156\004\313\341\323\105\025\252
\245\321\035\235\135\143\350\044\346\066\024\342\207\255\033\131
\365\104\233\373\327\167\174\037\001\160\142\241\040\032\242\305
\032\050\364\041\003\356\056\331\301\200\352\271\331\202\326\133
\166\302\313\073\265\322\000\360\243\016\341\255\156\100\367\333
\240\264\320\106\256\025\327\104\302\115\065\371\322\013\362\027
\366\254\146\325\044\262\117\321\034\231\300\156\365\175\353\164
\004\270\371\115\167\011\327\264\317\007\060\011\361\270\000\126
\331\027\026\026\012\053\206\337\217\001\031\032\345\273\202\143
\377\276\013\166\026\136\067\067\346\330\164\227\242\231\105\171

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Certinomis - Autorité Racine"

Issuer: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR

Serial Number: 1 (0x1)

Subject: CN=Certinomis - Autorité Racine,OU=0002 433998903,O=Certinomis,C=FR

```
# Not Valid Before: Wed Sep 17 08:28:59 2008
# Not Valid After: Sun Sep 17 08:28:59 2028
# Fingerprint (MD5): 7f:30:78:8c:03:e3:ca:c9:0a:e2:c9:ea:1e:aa:55:1a
# Fingerprint (SHA1): 2e:14:da:ec:28:f0:fa:1e:8e:38:9a:4e:ab:eb:26:c0:0a:d3:83:c3
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certinomis - Autorité Racine"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\056\024\332\354\050\360\372\036\216\070\232\116\253\353\046\300
\012\323\203\303
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\177\060\170\214\003\343\312\311\012\342\311\352\036\252\125\032
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\023\060\021\006\003\125\004\012\023\012\103\145\162\164\151\156
\157\155\151\163\061\027\060\025\006\003\125\004\013\023\016\060
\060\060\062\040\064\063\063\071\071\070\071\060\063\061\046\060
\044\006\003\125\004\003\014\035\103\145\162\164\151\156\157\155
\151\163\040\055\040\101\165\164\157\162\151\164\303\251\040\122
\141\143\151\156\145
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
```

```
# Certificate "ANF Server CA"
```

```
# Issuer: CN=ANF Server
```

```
CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de Certificación,L=Barcelona (see current
address at https://www.anf.es/address/),ST=Barcelona,C=ES
```

```
# Serial Number: 78923 (0x1344b)
```

```
# Subject: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current address at https://www.anf.es/address/),ST=Barcelona,C=ES
```

```
# Not Valid Before: Mon Nov 30 23:00:00 2009
```

```
# Not Valid After: Tue Nov 30 23:00:00 2021
```

```
# Fingerprint (MD5): 8c:18:ed:28:bf:45:19:e6:49:98:e1:35:22:2f:54:c6
```

```
# Fingerprint (SHA1): ce:a9:89:0d:85:d8:07:53:a6:26:28:6c:da:d7:8c:b5:66:d7:0c:f2
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Server CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101
\116\106\040\123\145\162\166\145\162\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101
\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101
\116\106\040\123\145\162\166\145\162\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\001\064\113
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\235\060\202\005\205\240\003\002\001\002\002\003\001
\064\113\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143
\145\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076
```

\102\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143
\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141
\164\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156
\146\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050
\060\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164
\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146
\151\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004
\013\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103
\101\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062
\070\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015
\101\116\106\040\123\145\162\166\145\162\040\103\101\060\036\027
\015\060\071\061\061\063\060\062\063\060\060\060\060\132\027\015
\062\061\061\061\063\060\062\063\060\060\060\060\132\060\201\331
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060
\020\006\003\125\004\010\014\011\102\141\162\143\145\154\157\156
\141\061\107\060\105\006\003\125\004\007\014\076\102\141\162\143
\145\154\157\156\141\040\050\163\145\145\040\143\165\162\162\145
\156\164\040\141\144\144\162\145\163\163\040\141\164\040\150\164
\164\160\163\072\057\057\167\167\167\056\141\156\146\056\145\163
\057\141\144\144\162\145\163\163\057\051\061\050\060\046\006\003
\125\004\012\014\037\101\116\106\040\101\165\164\157\162\151\144
\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143
\151\303\263\156\061\027\060\025\006\003\125\004\013\014\016\101
\116\106\040\103\154\141\163\145\040\061\040\103\101\061\022\060
\020\006\003\125\004\005\023\011\107\066\063\062\070\067\065\061
\060\061\026\060\024\006\003\125\004\003\014\015\101\116\106\040
\123\145\162\166\145\162\040\103\101\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\277\352\110\247\232\210
\071\153\054\110\100\007\004\223\174\367\270\055\176\245\067\342
\141\326\041\374\220\067\313\151\076\136\213\067\337\133\157\073
\330\266\303\210\100\220\364\235\014\134\020\122\261\263\345\137
\221\020\346\375\250\200\024\137\323\213\275\134\275\017\043\222
\011\067\343\162\322\146\224\013\134\164\224\057\136\362\116\330
\003\306\263\316\126\245\034\331\173\375\117\007\114\324\267\332
\137\051\115\165\362\037\125\317\062\043\034\106\011\047\035\105
\354\361\214\064\211\336\173\026\247\103\136\212\053\351\224\103
\036\327\076\223\155\157\211\075\274\356\261\310\267\377\311\175
\343\137\015\157\167\170\365\052\056\215\304\213\230\227\060\261
\106\132\013\143\160\324\170\307\206\263\177\377\047\102\252\237
\212\156\155\241\224\312\354\207\002\034\326\124\113\375\274\211
\233\246\143\070\146\214\026\211\211\227\303\120\350\366\102\001
\247\167\175\020\031\222\003\350\135\105\310\025\305\207\033\015
\221\362\306\071\234\173\363\300\012\231\370\356\203\157\176\102
\167\021\216\303\037\034\162\057\075\033\002\003\001\000\001\243
\202\002\152\060\202\002\146\060\035\006\003\125\035\016\004\026
\004\024\276\073\366\264\061\267\163\044\110\071\305\127\023\224
\165\252\237\201\077\054\060\202\001\011\006\003\125\035\043\004

\202\001\000\060\201\375\200\024\276\073\366\264\061\267\163\044
\110\071\305\127\023\224\165\252\237\201\077\054\241\201\337\244
\201\334\060\201\331\061\013\060\011\006\003\125\004\006\023\002
\105\123\061\022\060\020\006\003\125\004\010\014\011\102\141\162
\143\145\154\157\156\141\061\107\060\105\006\003\125\004\007\014
\076\102\141\162\143\145\154\157\156\141\040\050\163\145\145\040
\143\165\162\162\145\156\164\040\141\144\144\162\145\163\163\040
\141\164\040\150\164\164\160\163\072\057\057\167\167\167\056\141
\156\146\056\145\163\057\141\144\144\162\145\163\163\057\051\061
\050\060\046\006\003\125\004\012\014\037\101\116\106\040\101\165
\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\303\263\156\061\027\060\025\006\003\125
\004\013\014\016\101\116\106\040\103\154\141\163\145\040\061\040
\103\101\061\022\060\020\006\003\125\004\005\023\011\107\066\063
\062\070\067\065\061\060\061\026\060\024\006\003\125\004\003\014
\015\101\116\106\040\123\145\162\166\145\162\040\103\101\202\003
\001\064\113\060\014\006\003\125\035\023\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\061\006\012\053\006\001\004\001\201\217\034\052\006\004
\043\033\041\150\164\164\160\163\072\057\057\167\167\167\056\141
\156\146\056\145\163\057\101\103\057\101\103\124\101\123\057\067
\070\071\062\063\060\030\006\012\053\006\001\004\001\201\217\034
\023\001\004\012\033\010\070\060\061\055\063\064\060\060\060\070
\006\010\053\006\001\005\005\007\001\001\004\054\060\052\060\050
\006\010\053\006\001\005\005\007\060\001\206\034\150\164\164\160
\072\057\057\167\167\167\056\141\156\146\056\145\163\057\101\103
\057\122\103\057\157\143\163\160\060\143\006\003\125\035\037\004
\134\060\132\060\053\240\051\240\047\206\045\150\164\164\160\163
\072\057\057\167\167\167\056\141\156\146\056\145\163\057\101\103
\057\101\116\106\123\145\162\166\145\162\103\101\056\143\162\154
\060\053\240\051\240\047\206\045\150\164\164\160\163\072\057\057
\143\162\154\056\141\156\146\056\145\163\057\101\103\057\101\116
\106\123\145\162\166\145\162\103\101\056\143\162\154\060\026\006
\003\125\035\022\004\017\060\015\201\013\151\156\146\157\100\141
\156\146\056\145\163\060\026\006\003\125\035\021\004\017\060\015
\201\013\151\156\146\157\100\141\156\146\056\145\163\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\265\306\307\274\106\372\102\134\023\301\224\165\063\126\277
\057\247\007\163\354\067\343\103\164\352\371\146\117\136\215\177
\360\346\171\303\115\365\331\070\245\314\312\103\364\123\200\206
\277\274\320\021\135\220\304\302\100\107\353\305\207\223\301\266
\170\136\232\256\207\365\142\020\131\114\114\155\006\276\231\023
\025\263\263\372\034\162\176\340\042\041\001\130\065\070\150\242
\344\370\341\360\360\066\120\221\340\264\167\334\143\204\063\222
\140\270\313\026\362\322\143\073\114\134\065\072\347\254\002\123
\305\034\201\001\167\307\034\021\037\124\060\357\124\217\045\372
\211\047\224\064\243\017\024\117\157\351\163\331\030\142\347\356
\010\350\311\203\173\310\063\233\174\104\232\174\032\220\265\322

```
\161\211\337\075\364\034\117\116\121\340\311\153\266\252\013\036
\331\060\017\323\143\325\355\160\364\301\203\355\006\105\232\250
\352\264\211\067\375\132\067\107\357\221\171\247\065\377\360\334
\060\355\015\024\147\333\174\132\340\217\155\063\376\074\236\025
\063\303\303\055\016\135\252\174\015\216\061\226\115\213\377\005
\325
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ANF Server CA"

Issuer: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current
address at <https://www.anf.es/address/>),ST=Barcelona,C=ES

Serial Number: 78923 (0x1344b)

Subject: CN=ANF Server CA,2.5.4.5=G63287510,OU=ANF Clase 1 CA,O=ANF Autoridad de
Certificación,L=Barcelona (see current address at <https://www.anf.es/address/>),ST=Barcelona,C=ES

Not Valid Before: Mon Nov 30 23:00:00 2009

Not Valid After: Tue Nov 30 23:00:00 2021

Fingerprint (MD5): 8c:18:ed:28:bf:45:19:e6:49:98:e1:35:22:2f:54:c6

Fingerprint (SHA1): ce:a9:89:0d:85:d8:07:53:a6:26:28:6c:da:d7:8c:b5:66:d7:0c:f2

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ANF Server CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\316\251\211\015\205\330\007\123\246\046\050\154\332\327\214\265
\146\327\014\362
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\214\030\355\050\277\105\031\346\111\230\341\065\042\057\124\306
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\331\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\022\060\020\006\003\125\004\010\014\011\102\141\162\143\145
\154\157\156\141\061\107\060\105\006\003\125\004\007\014\076\102
\141\162\143\145\154\157\156\141\040\050\163\145\145\040\143\165
\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164
\040\150\164\164\160\163\072\057\057\167\167\167\056\141\156\146
\056\145\163\057\141\144\144\162\145\163\163\057\051\061\050\060
\046\006\003\125\004\012\014\037\101\116\106\040\101\165\164\157
\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\303\263\156\061\027\060\025\006\003\125\004\013
\014\016\101\116\106\040\103\154\141\163\145\040\061\040\103\101
```

```

\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070
\067\065\061\060\061\026\060\024\006\003\125\004\003\014\015\101
\116\106\040\123\145\162\166\145\162\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\001\064\113
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "KEYNECTIS ROOT CA"
# Issuer: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR
# Serial Number:11:21:bc:27:6c:55:47:af:58:4e:ef:d4:ce:d6:29:b2:a2:85
# Subject: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR
# Not Valid Before: Tue May 26 00:00:00 2009
# Not Valid After: Tue May 26 00:00:00 2020
# Fingerprint (MD5): cc:4d:ae:fb:30:6b:d8:38:fe:50:eb:86:61:4b:d2:26
# Fingerprint (SHA1): 9c:61:5c:4d:4d:85:10:3a:53:26:c2:4d:ba:ea:e4:a2:d2:d5:cc:97
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "KEYNECTIS ROOT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\041\274\047\154\125\107\257\130\116\357\324\316\326
\051\262\242\205

```

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\345\060\202\002\315\240\003\002\001\002\002\022\021
\041\274\047\154\125\107\257\130\116\357\324\316\326\051\262\242
\205\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101\060\036
\027\015\060\071\060\065\062\066\060\060\060\060\060\132\027
\015\062\060\060\065\062\066\060\060\060\060\060\132\060\114
\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022\060
\020\006\003\125\004\012\023\011\113\105\131\116\105\103\124\111
\123\061\015\060\013\006\003\125\004\013\023\004\122\117\117\124
\061\032\060\030\006\003\125\004\003\023\021\113\105\131\116\105
\103\124\111\123\040\122\117\117\124\040\103\101\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\306\375\263
\027\205\241\255\046\033\225\151\065\041\075\244\210\372\336\333
\140\066\100\027\151\302\024\143\373\270\331\302\164\025\067\056
\234\320\040\315\151\215\204\062\242\205\114\024\264\233\362\045
\263\124\052\203\077\055\276\017\363\073\144\321\377\240\120\357
\167\117\073\116\341\077\013\144\205\232\272\130\176\322\303\142
\323\144\045\242\324\262\227\074\167\135\143\052\063\222\374\315
\202\015\233\124\225\207\365\265\353\214\315\133\321\312\060\057
\311\210\106\265\315\015\021\264\030\217\356\321\241\076\135\025
\350\050\317\337\303\220\233\154\314\321\014\105\167\263\072\353
\212\220\035\351\257\144\152\211\173\251\075\103\164\372\344\147
\042\241\373\334\115\304\365\142\311\312\045\264\311\200\140\063
\251\335\173\240\002\277\226\045\012\136\311\137\051\173\264\027
\201\213\155\201\031\320\331\203\134\005\217\101\151\032\151\103
\200\237\250\257\340\351\214\221\213\047\053\242\046\140\315\017
\362\244\243\002\203\216\030\201\302\027\212\103\025\371\155\363
\035\020\244\132\234\104\141\043\041\172\330\373\321\002\003\001
\000\001\243\201\300\060\201\275\060\022\006\003\125\035\023\001
\001\377\004\010\060\006\001\001\377\002\001\004\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\127\006\003
\125\035\037\004\120\060\116\060\114\240\112\240\110\206\106\150
\164\164\160\072\057\057\164\162\165\163\164\143\145\156\164\145
\162\055\143\162\154\056\143\145\162\164\151\146\151\143\141\164
\062\056\143\157\155\057\113\145\171\156\145\143\164\151\163\057
\113\105\131\116\105\103\124\111\123\137\122\117\117\124\137\103
\101\056\143\162\154\060\035\006\003\125\035\016\004\026\004\024
\357\267\043\227\320\250\221\177\246\317\246\041\300\064\237\314
\167\101\341\320\060\037\006\003\125\035\043\004\030\060\026\200
\024\357\267\043\227\320\250\221\177\246\317\246\041\300\064\237
\314\167\101\341\320\060\015\006\011\052\206\110\206\367\015\001

```
\001\013\005\000\003\202\001\001\000\032\061\151\231\102\302\345
\100\205\242\237\222\303\143\324\217\041\071\250\031\041\376\172
\374\303\115\100\363\053\350\113\254\133\114\131\223\306\334\176
\013\257\174\137\225\205\153\275\307\157\272\301\276\370\306\072
\147\113\223\306\005\151\076\044\055\360\033\221\306\076\077\354
\102\030\223\154\003\044\212\156\371\040\147\053\174\155\253\064
\311\052\042\063\015\327\175\217\356\322\066\144\102\310\065\232
\156\031\141\313\215\147\360\150\247\320\044\005\346\303\027\272
\105\256\174\103\265\200\170\003\115\040\163\005\374\103\020\235
\065\151\102\165\224\045\202\053\246\073\220\030\336\301\251\257
\363\055\225\277\225\247\317\030\227\341\131\342\242\257\032\026
\141\015\367\023\161\123\223\067\375\074\257\000\035\154\213\024
\257\106\226\214\266\122\174\314\055\116\315\341\351\113\012\356
\232\376\172\230\347\051\272\033\332\034\272\334\153\315\004\016
\046\100\251\353\163\074\376\120\250\021\047\125\275\333\216\113
\357\117\030\355\025\377\275\206\230\146\356\232\045\161\064\154
\120\361\262\121\313\146\235\115\051
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "KEYNECTIS ROOT CA"

Issuer: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

#

Serial Number:11:21:bc:27:6c:55:47:af:58:4e:ef:d4:ce:d6:29:b2:a2:85

Subject: CN=KEYNECTIS ROOT CA,OU=ROOT,O=KEYNECTIS,C=FR

Not Valid Before: Tue May 26 00:00:00 2009

Not Valid After: Tue May 26 00:00:00 2020

Fingerprint (MD5): cc:4d:ae:fb:30:6b:d8:38:fe:50:eb:86:61:4b:d2:26

Fingerprint (SHA1): 9c:61:5c:4d:4d:85:10:3a:53:26:c2:4d:ba:ea:e4:a2:d2:d5:cc:97

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "KEYNECTIS ROOT CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\234\141\134\115\115\205\020\072\123\046\302\115\272\352\344\242
\322\325\314\227
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\314\115\256\373\060\153\330\070\376\120\353\206\141\113\322\046
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\114\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\023\011\113\105\131\116\105\103
```

```
\124\111\123\061\015\060\013\006\003\125\004\013\023\004\122\117
\117\124\061\032\060\030\006\003\125\004\003\023\021\113\105\131
\116\105\103\124\111\123\040\122\117\117\124\040\103\101
END
```

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\022\021\041\274\047\154\125\107\257\130\116\357\324\316\326
\051\262\242\205
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "I.CA - Standard Certification Authority, 09/2009"

Issuer: OU=I.CA - Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA - Standard Certification Authority\, 09/2009,C=CZ

Serial Number:16:e3:60

Subject: OU=I.CA - Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA - Standard Certification Authority\, 09/2009,C=CZ

Not Valid Before: Tue Sep 01 00:00:00 2009

Not Valid After: Sun Sep 01 00:00:00 2019

Fingerprint

(MD5): 86:ef:8e:31:9d:9f:85:69:a2:a4:1a:12:71:68:ba:1b

Fingerprint (SHA1): 90:de:ce:77:f8:c8:25:34:0e:62:eb:d6:35:e1:be:20:cf:73:27:dd

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "I.CA - Standard Certification Authority, 09/2009"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003
\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166
\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\123\145\162\166\151\143\145\163
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003
\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166
\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\123\145\162\166\151\143\145\163

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\026\343\140

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\052\060\202\003\022\240\003\002\001\002\002\003\026
\343\140\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103
\132\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101
\040\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164
\157\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006
\003\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157
\166\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163\060
\036\027\015\060\071\060\071\060\061\060\060\060\060\060\060\132
\027\015\061\071\060\071\060\061\060\060\060\060\060\132\060
\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006\003
\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162\164
\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157\162
\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003\125
\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166\151
\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\123\145\162\166\151\143\145\163\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\250\010
\126\022\077\373\224\203\251\140\166\275\105\203\176\226\064\074
\317\111\116\326\317\374\040\341\341\261\002\024\155\255\312\176
\120\162\051\251\375\234\167\046\070\144\367\103\101\077\024\202
\004\242\101\220\002\347\231\367\203\142\170\104\205\350\235\005

\160\324\376\170\241\164\064\307\254\073\205\002\335\356\121\133
\106\073\123\063\326\147\354\354\024\056\343\304\345\263\164\203
\000\314\306\226\346\034\203\332\334\030\120\151\372\335\103\321
\216\100\375\026\244\267\214\145\207\340\276\254\227\037\260\161
\353\000\145\127\026\316\154\207\257\227\210\360\135\367\207\115
\072\021\012\242\302\104\024\300\026\362\117\365\333\225\102\257
\051\263\051\240\203\121\156\376\074\121\127\223\060\045\046\272
\073\152\206\310\366\013\321\161\077\234\267\072\310\316\147\011
\214\372\100\033\172\154\336\310\034\240\306\134\273\141\030\210
\077\056\131\035\126\374\172\105\234\246\331\070\331\305\140\314
\271\101\125\267\312\274\115\356\264\247\304\366\240\016\274\211
\305\001\225\261\134\337\117\360\314\302\315\102\273\137\002\003
\001\000\001\243\125\060\123\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\021\006\003\125\035\040\004
\012\060\010\060\006\006\004\125\035\040\000\060\035\006\003\125
\035\016\004\026\004\024\301\114\070\224\325\200\206\110\331\042
\220\054\323\356\031\020\333\147\107\207\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\243\313
\321\175\164\373\065\170\007\222\350\356\150\351\344\122\136\360
\330\143\221\224\237\150\373\276\133\272\251\341\143\167\253\120
\166\306\351\126\107\124\120\231\264\045\213\350\301\031\162\066
\132\011\276\347\326\372\302\266\062\075\107\303\120\116\231\156
\223\066\305\212\121\167\143\340\111\063\253\074\037\212\351\073
\331\206\265\050\307\302\165\161\133\146\152\215\130\016\363\165
\220\265\255\054\201\030\315\234\330\303\315\117\361\373\151\040
\227\300\110\317\023\105\022\265\034\366\076\203\342\116\136\335
\131\306\153\112\340\110\316\331\052\235\145\072\275\057\360\360
\114\274\011\172\313\067\000\244\077\073\014\043\335\343\373\306
\102\242\264\266\346\322\162\205\114\337\263\336\026\247\176\035
\347\324\317\255\253\263\120\344\160\214\337\260\160\220\311\206
\236\356\174\204\213\144\034\153\341\150\025\176\311\245\164\340
\116\367\132\352\335\022\061\253\221\100\205\161\013\316\051\050
\371\156\070\024\134\035\376\354\021\277\115\103\176\236\137\070
\277\327\352\236\223\057\320\035\164\265\005\011\323\042

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "I.CA - Standard Certification Authority, 09/2009"

Issuer: OU=I.CA - Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Standard
Certification Authority, 09/2009,C=CZ

Serial Number:16:e3:60

Subject: OU=I.CA - Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Standard
Certification Authority, 09/2009,C=CZ


```

# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After: Sun Sep 01 00:00:00 2019
# Fingerprint (MD5):
86:ef:8e:31:9d:9f:85:69:a2:a4:1a:12:71:68:ba:1b
# Fingerprint (SHA1): 90:de:ce:77:f8:c8:25:34:0e:62:eb:d6:35:e1:be:20:cf:73:27:dd
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard Certification Authority, 09/2009"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\220\336\316\167\370\310\045\064\016\142\353\326\065\341\276\040
\317\163\047\335
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\206\357\216\061\235\237\205\151\242\244\032\022\161\150\272\033
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\253\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\071\060\067\006\003\125\004\003\014\060\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056\061\062\060\060\006\003
\125\004\013\014\051\111\056\103\101\040\055\040\120\162\157\166
\151\144\145\162\040\157\146\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\123\145\162\166\151\143\145\163
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\026\343\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "I.CA - Qualified Certification Authority, 09/2009"
# Issuer: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA -
Qualified Certification Authority\, 09/2009,C=CZ
# Serial Number:a0:37:a0
# Subject: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita\, a.s.,CN=I.CA -
Qualified Certification
Authority\, 09/2009,C=CZ
# Not Valid Before: Tue Sep 01 00:00:00 2009

```

```
# Not Valid After: Sun Sep 01 00:00:00 2019
# Fingerprint (MD5): 8d:63:9b:56:c1:14:e4:ee:9a:12:85:86:11:90:82:a3
# Fingerprint (SHA1): d2:44:1a:a8:c2:03:ae:ca:a9:6e:50:1f:12:4d:52:b6:8f:e4:c3:75
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Qualified Certification Authority, 09/2009"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\267\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\072\060\070\006\003\125\004\003\014\061\111\056\103\101\040
\055\040\121\165\141\154\151\146\151\145\144\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164
\157\162\151\164\141\054\040\141\056\163\056\061\075\060\073\006
\003\125\004\013\014\064\111\056\103\101\040\055\040\101\143\143
\162\145\144\151\164\145\144\040\120\162\157\166\151\144\145\162
\040\157\146\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\123\145\162\166\151\143\145\163
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\267\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\072\060\070\006\003\125\004\003\014\061\111\056\103\101\040
\055\040\121\165\141\154\151\146\151\145\144\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\054\040\060\071\057\062\060\060\071\061\055\060\053
\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145
\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164
\157\162\151\164\141\054\040\141\056\163\056\061\075\060\073\006
\003\125\004\013\014\064\111\056\103\101\040\055\040\101\143\143
\162\145\144\151\164\145\144\040\120\162\157\166\151\144\145\162
\040\157\146\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\123\145\162\166\151\143\145\163
END
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CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "I.CA - Qualified Certification Authority, 09/2009"

Issuer: OU=I.CA - Accredited Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA -
Qualified Certification Authority, 09/2009,C=CZ

Serial Number:a0:37:a0

Subject: OU=I.CA - Accredited

Provider of Certification Services,O=První certifikační autorita, a.s.,CN=I.CA - Qualified Certification Authority,
09/2009,C=CZ

Not Valid Before: Tue Sep 01 00:00:00 2009

Not Valid After: Sun Sep 01 00:00:00 2019

Fingerprint (MD5): 8d:63:9b:56:c1:14:e4:ee:9a:12:85:86:11:90:82:a3

Fingerprint (SHA1): d2:44:1a:a8:c2:03:ae:ca:a9:6e:50:1f:12:4d:52:b6:8f:e4:c3:75

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CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ICA - Qualified Certification Authority, 09/2009"

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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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END

CKA_ISSUER MULTILINE_OCTAL

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CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "VI Registru Centras RCSC (RootCA)"

Issuer: CN=VI Registru Centras

RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru Centras - I.k. 124110246,C=LT

Serial Number:03:a3:a4:57:b5:f0:f3:86:4a:11:63:e8:98:ff:16:9c

Subject: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru Centras - I.k. 124110246,C=LT

Not Valid Before: Mon Jul 21 11:47:46 2008

Not Valid After: Sun Jul 21 11:47:46 2024

Fingerprint (MD5): 41:5b:95:78:0d:d1:c3:a7:dc:d9:ba:fe:e7:27:b6:14

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CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

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CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
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\230\065\251\321\212\211\274\325\235\125\302\056\236\007\045\106
\366\222\115\120\372\075\211\362\337\223\277\223\224\320\331\257
\127\243\363\146\346\216\361\350\240\033\030\006\223\132\054\211
\015\066\304\372\040\263\334\050\365\152\356\217\061\233\131\070
\330\116\152\240\043\041\344\206\253\345\373\140\243\321\315\132
\054\102\111\246\016\125\044\045\065\375\322\072\257\153\130\246
\221\106\137\151\313\275\176\046\233\336\010\275\036\354\236\246
\370\234\165\244\100\066\225\113\042\117\306\266\175\162\121\274
\343\302\150\315\315\345\213\276\300\302\117\233\156\145\316\026
\267\010\210\307\207\336\377\062\214\313\353\102\101\254\373\327
\317\001\103\370\157\300\326\013\360\367\222\351\313\105\135\144
\261\367\312\074\273\211\010\226\311\332\016\341\161\052\017\354
\244\102\055\343\152\017\107\107\260\123\246\326\205\120\227\060
\327\214\056\137\106\042\320\254\316\074\136\234\036\162\203\375
\014\247\370\027\062\273\141\336\343\117\057\030\216\202\265\207
\033\164\005\060\112\277\152\036\110\074\124\050\261\135\235\222
\137\233\020\343\056\042\212\257\335\066\144\177\023\166\107\203
\065\225\032\224\217\365\304\123\155\071\275\325\213\365\312\317
\030\103\005\001\223\244\066\336\060\322\024\363\260\144\265\312
\316\225\367\272\164\354\212\163\076\122\323\136\123\000

END

CKA_NSS_MOZILLA_CA_POLICY


```
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "VI Registru Centras RCSC (RootCA)"
# Issuer: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru
Centras - I.k. 124110246,C=LT
# Serial Number:03:a3:a4:57:b5:f0:f3:86:4a:11:63:e8:98:ff:16:9c
# Subject: CN=VI Registru Centras RCSC (RootCA),OU=Registru Centro Sertifikavimo Centras,O=VI Registru
Centras - I.k. 124110246,C=LT
# Not Valid Before: Mon Jul 21 11:47:46 2008
# Not Valid After: Sun Jul 21 11:47:46 2024
# Fingerprint (MD5): 41:5b:95:78:0d:d1:c3:a7:dc:d9:ba:fe:e7:27:b6:14
# Fingerprint (SHA1): 97:1d:34:86:fc:1e:8e:63:15:f7:c6:f2:e1:29:67:c7:24:34:22:14
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "VI Registru Centras RCSC (RootCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\227\035\064\206\374\036\216\143\025\367\306\362\341\051\147\307
\044\064\042\024
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\101\133\225\170\015\321\303\247\334\331\272\376\347\047\266\024
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\055\060\053\006\003\125\004\012\023\044\126\111\040\122\145
\147\151\163\164\162\165\040\103\145\156\164\162\141\163\040\055
\040\111\056\153\056\040\061\062\064\061\061\060\062\064\066\061
\056\060\054\006\003\125\004\013\023\045\122\145\147\151\163\164
\162\165\040\103\145\156\164\162\157\040\123\145\162\164\151\146
\151\153\141\166\151\155\157\040\103\145\156\164\162\141\163\061
\052\060\050\006\003\125\004\003\023\041\126\111\040\122\145\147
\151\163\164\162\165\040\103\145\156\164\162\141\163\040\122\103
\123\103\040\050\122\157\157\164\103\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\243\244\127\265\360\363\206\112\021\143\350\230\377
\026\234
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
```

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Autoridade Certificadora Raiz Brasileira v1"

Issuer: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

Serial Number: 1 (0x1)

Subject: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

Not Valid Before: Tue Jul 29 19:17:10 2008

Not Valid After: Thu Jul 29 19:17:10 2021

Fingerprint (MD5): 93:f1:ad:34:0b:2b:e7:a8:54:60:e2:73:8c:a4:94:31

Fingerprint (SHA1): 70:5d:2b:45:65:c7:04:7a:54:06:94:a7:9a:f7:ab:b8:42:bd:c1:61

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v1"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\200\060\202\003\150\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122\061
\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102\162
\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064\111
\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156\141
\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141\040
\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055\040
\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101\165
\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146\151
\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141\163
\151\154\145\151\162\141\040\166\061\060\036\027\015\060\070\060
\067\062\071\061\071\061\067\061\060\132\027\015\062\061\060\067
\062\071\061\071\061\067\061\060\132\060\201\227\061\013\060\011
\006\003\125\004\006\023\002\102\122\061\023\060\021\006\003\125
\004\012\023\012\111\103\120\055\102\162\141\163\151\154\061\075
\060\073\006\003\125\004\013\023\064\111\156\163\164\151\164\165
\164\157\040\116\141\143\151\157\156\141\154\040\144\145\040\124
\145\143\156\157\154\157\147\151\141\040\144\141\040\111\156\146
\157\162\155\141\143\141\157\040\055\040\111\124\111\061\064\060
\062\006\003\125\004\003\023\053\101\165\164\157\162\151\144\141
\144\145\040\103\145\162\164\151\146\151\143\141\144\157\162\141
\040\122\141\151\172\040\102\162\141\163\151\154\145\151\162\141
\040\166\061\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\316\034\350\276\223\064\316\311\261\344\124\356
\011\366\354\244\010\205\240\077\306\212\306\160\060\247\200\214
\355\076\001\124\007\214\031\043\073\237\273\307\264\213\040\261
\342\367\101\026\055\136\207\146\272\260\007\335\157\321\077\074
\332\310\131\063\235\025\260\237\222\310\126\124\130\212\072\047
\242\064\036\233\170\265\267\315\345\233\351\300\056\022\236\160
\170\007\372\216\362\114\300\370\345\162\174\036\251\251\140\003
\127\046\107\333\203\166\303\316\310\022\273\321\377\357\256\263
\142\175\232\240\344\274\156\175\001\056\064\140\334\207\340\137
\177\005\160\134\060\025\054\302\165\243\077\120\003\146\043\146
\054\347\164\167\170\333\146\027\337\371\037\015\202\150\217\165
\207\367\351\061\172\123\117\317\130\142\273\100\242\064\317\300
\160\204\120\227\025\332\040\113\351\373\114\102\255\053\150\216
\243\331\255\005\142\376\010\164\304\350\301\314\205\023\316\255
\050\060\120\335\336\300\201\301\111\260\136\056\046\070\351\143
\004\063\167\265\200\166\315\052\177\362\074\254\135\223\102\071
\364\242\163\105\002\003\001\000\001\243\201\324\060\201\321\060
\116\006\003\125\035\040\004\107\060\105\060\103\006\005\140\114
\001\001\000\060\072\060\070\006\010\053\006\001\005\005\007\002
\001\026\054\150\164\164\160\072\057\057\141\143\162\141\151\172
\056\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142

```
\162\057\104\120\103\141\143\162\141\151\172\056\160\144\146\060
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060
\206\056\150\164\164\160\072\057\057\141\143\162\141\151\172\056
\151\143\160\142\162\141\163\151\154\056\147\157\166\056\142\162
\057\114\103\122\141\143\162\141\151\172\166\061\056\143\162\154
\060\035\006\003\125\035\016\004\026\004\024\102\262\054\134\164
\001\007\276\233\377\125\063\073\356\051\273\135\221\277\006\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\131\154\212\166\351\031\161\127\203\376\247\364
\172\017\236\201\320\317\007\034\014\043\351\044\015\121\313\063
\350\052\011\303\172\377\016\243\200\206\140\301\160\227\340\300
\012\125\335\244\145\114\217\247\107\260\127\267\363\253\304\303
\031\343\230\354\015\260\033\121\221\311\331\011\326\351\152\263
\347\014\260\262\222\207\373\216\115\025\354\022\024\031\170\014
\142\352\024\071\030\012\305\125\333\123\205\334\173\050\372\025
\161\243\312\164\045\202\017\147\047\064\327\256\122\023\002\373
\305\357\232\200\045\245\122\236\071\016\355\072\364\170\007\137
\325\050\172\012\112\365\320\303\147\367\214\130\027\157\012\000
\243\046\020\264\140\042\072\112\110\245\332\340\251\204\336\103
\333\237\103\247\077\050\004\107\222\057\367\347\144\165\041\322
\117\201\316\252\076\144\016\343\016\255\125\232\176\224\233\064
\301\320\256\151\116\036\243\331\263\207\127\332\160\302\132\175
\207\315\371\277\067\336\355\126\065\367\267\042\016\117\222\270
\077\010\337\234\236\230\136\362\157\271\372\233\054\370\315\105
\330\162\262\040
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Autoridade Certificadora Raiz Brasileira v1"

Issuer: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

Serial Number: 1 (0x1)

Subject: CN=Autoridade Certificadora Raiz Brasileira v1,OU=Instituto Nacional de Tecnologia da Informacao - ITI,O=ICP-Brasil,C=BR

Not Valid Before: Tue Jul 29 19:17:10 2008

Not Valid After: Thu Jul 29 19:17:10 2021

Fingerprint (MD5): 93:f1:ad:34:0b:2b:e7:a8:54:60:e2:73:8c:a4:94:31

Fingerprint (SHA1): 70:5d:2b:45:65:c7:04:7a:54:06:94:a7:9a:f7:ab:b8:42:bd:c1:61

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridade Certificadora Raiz Brasileira v1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\160\135\053\105\145\307\004\172\124\006\224\247\232\367\253\270
\102\275\301\141
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\223\361\255\064\013\053\347\250\124\140\342\163\214\244\224\061
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\102\122
\061\023\060\021\006\003\125\004\012\023\012\111\103\120\055\102
\162\141\163\151\154\061\075\060\073\006\003\125\004\013\023\064
\111\156\163\164\151\164\165\164\157\040\116\141\143\151\157\156
\141\154\040\144\145\040\124\145\143\156\157\154\157\147\151\141
\040\144\141\040\111\156\146\157\162\155\141\143\141\157\040\055
\040\111\124\111\061\064\060\062\006\003\125\004\003\023\053\101
\165\164\157\162\151\144\141\144\145\040\103\145\162\164\151\146
\151\143\141\144\157\162\141\040\122\141\151\172\040\102\162\141
\163\151\154\145\151\162\141\040\166\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Actalis Authentication CA G1"
# Issuer: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT
# Serial Number: 1 (0x1)
# Subject: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT
# Not Valid Before: Tue Jun 23 14:06:00 2009
# Not Valid After: Sat Jun 25 14:06:00 2022
# Fingerprint (MD5): c2:2a:59:ab:cf:15:2f:4c:f7:e6:31:a3:16:ae:84:0c
# Fingerprint (SHA1): 91:58:c5:ef:98:73:01:a8:90:3c:fd:ab:03:d7:2d:a1:d8:89:09:c9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Actalis Authentication CA G1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061
```

\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151
\143\141\164\151\157\156\040\103\101\040\107\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151
\143\141\164\151\157\156\040\103\101\040\107\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\224\060\202\002\174\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061\017
\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\103\101\040\107\061\060\036\027\015\060
\071\060\066\062\063\061\064\060\066\060\060\132\027\015\062\062
\060\066\062\065\061\064\060\066\060\060\132\060\152\061\013\060
\011\006\003\125\004\006\023\002\111\124\061\017\060\015\006\003
\125\004\007\014\006\115\151\154\141\156\157\061\043\060\041\006
\003\125\004\012\014\032\101\143\164\141\154\151\163\040\123\056
\160\056\101\056\057\060\063\063\065\070\065\062\060\071\066\067
\061\045\060\043\006\003\125\004\003\014\034\101\143\164\141\154
\151\163\040\101\165\164\150\145\156\164\151\143\141\164\151\157
\156\040\103\101\040\107\061\060\202\001\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060
\202\001\012\002\202\001\001\000\303\034\206\064\077\047\122\102
\140\272\053\140\320\041\053\311\327\351\100\165\072\154\130\017
\043\073\317\206\076\324\144\253\156\332\352\310\052\330\225\105
\337\311\034\322\045\222\236\020\230\132\213\161\151\300\225\351
\366\153\150\334\367\266\304\015\376\156\365\160\073\301\244\250
\117\040\242\047\013\237\361\022\165\174\317\256\177\136\313\170
\002\130\050\327\057\252\333\240\256\164\075\176\253\366\351\162

\241\052\317\326\220\140\337\340\240\065\312\300\333\004\304\007
\126\374\146\165\214\216\172\023\241\074\006\153\032\346\177\071
\234\210\344\204\157\242\342\177\153\237\354\001\252\322\304\313
\262\354\232\075\270\027\030\254\037\140\231\063\346\353\005\335
\314\362\151\147\260\016\276\050\044\103\313\055\271\107\204\031
\371\352\344\361\365\150\364\237\307\173\120\121\257\242\374\157
\167\210\061\277\222\333\177\234\305\265\254\241\010\230\347\152
\063\376\321\273\000\341\267\005\010\257\363\246\126\210\066\075
\343\212\112\342\015\235\200\206\146\237\324\302\243\120\272\034
\022\327\207\212\061\112\270\025\002\003\001\000\001\243\105\060
\103\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\022\006\003\125\035\023\001\001\377\004\010\060\006\001
\001\377\002\001\000\060\035\006\003\125\035\016\004\026\004\024
\001\273\326\233\126\264\176\346\305\130\335\054\230\364\312\162
\366\137\063\206\060\015\006\011\052\206\110\206\367\015\001\001
\005\005\000\003\202\001\001\000\241\040\326\313\242\064\155\074
\156\341\125\322\112\320\331\272\262\067\121\210\167\047\356\002
\110\223\105\101\342\165\121\362\031\224\011\240\363\270\175\272
\003\200\043\240\045\357\001\031\265\331\032\172\055\343\102\212
\261\206\061\017\226\354\146\204\362\316\043\022\106\226\153\061
\136\006\272\257\243\122\252\102\040\250\321\256\252\233\337\304
\027\236\123\160\001\264\251\032\332\150\310\143\017\266\132\163
\123\321\151\021\006\023\122\347\153\250\005\061\267\260\374\207
\106\305\165\210\201\361\137\170\002\347\237\255\234\273\124\355
\137\231\152\067\325\353\125\263\052\300\103\140\121\334\264\161
\222\046\243\017\314\172\075\334\300\102\211\027\051\010\147\124
\144\305\371\250\104\274\204\161\130\226\075\147\127\177\273\254
\220\263\161\042\277\076\272\254\146\046\105\020\263\360\037\072
\072\150\245\120\065\312\264\027\221\006\001\054\367\015\260\160
\262\133\126\165\271\167\231\300\331\225\205\002\055\163\146\007
\311\117\231\021\356\133\053\250\343\150\043\005\250\363\004\017
\006\273\037\011\216\306\133\035

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Actalis Authentication CA G1"

Issuer: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT

Serial Number: 1 (0x1)

Subject: CN=Actalis Authentication CA G1,O=Actalis S.p.A./03358520967,L=Milano,C=IT

Not Valid Before: Tue Jun 23 14:06:00 2009

Not Valid After: Sat Jun 25 14:06:00 2022

Fingerprint (MD5): c2:2a:59:ab:cf:15:2f:4c:f7:e6:31:a3:16:ae:84:0c

Fingerprint (SHA1): 91:58:c5:ef:98:73:01:a8:90:3c:fd:ab:03:d7:2d:a1:d8:89:09:c9

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Actalis Authentication CA G1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\221\130\305\357\230\163\001\250\220\074\375\253\003\327\055\241
\330\211\011\311
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\302\052\131\253\317\025\057\114\367\346\061\243\026\256\204\014
END
CKA_ISSUER MULTILINE_OCTAL
\060\152\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\017\060\015\006\003\125\004\007\014\006\115\151\154\141\156\157
\061\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154
\151\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065
\062\060\071\066\067\061\045\060\043\006\003\125\004\003\014\034
\101\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151
\143\141\164\151\157\156\040\103\101\040\107\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "A-Trust-Qual-03"
# Issuer: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr
GmbH,C=AT
# Serial Number: 255636 (0x3e694)
# Subject: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme
im elektr. Datenverkehr GmbH,C=AT
# Not Valid Before: Thu Apr 24 22:00:00 2008
# Not Valid After: Tue Apr 24 22:00:00 2018
# Fingerprint (MD5): d8:7e:32:ef:69:f8:bf:72:03:1d:40:82:e8:a7:75:af
# Fingerprint (SHA1): 42:ef:dd:e6:bf:f3:5e:d0:ba:e6:ac:dd:20:4c:50:ae:86:c4:f4:fa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-03"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

```


\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\063

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\063

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\003\346\224

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\313\060\202\002\263\240\003\002\001\002\002\003\003
\346\224\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166
\145\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006
\003\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165
\141\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017
\101\055\124\162\165\163\164\055\121\165\141\154\055\060\063\060
\036\027\015\060\070\060\064\062\064\062\062\060\060\060\060\132
\027\015\061\070\060\064\062\064\062\062\060\060\060\060\132\060
\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165\163
\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145\162
\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155\040
\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145\162
\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003\125
\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141\154
\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101\055

\124\162\165\163\164\055\121\165\141\154\055\060\063\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\263\236
\044\210\034\322\317\100\003\110\152\252\245\240\053\275\226\365
\174\012\237\237\253\120\220\333\101\316\126\200\171\052\300\375
\223\123\172\234\133\363\131\141\044\210\143\243\325\030\356\233
\204\164\204\234\354\214\075\332\301\206\172\157\066\056\046\353
\176\075\311\076\255\347\256\113\164\167\050\053\044\040\377\052
\056\302\225\144\020\366\176\173\303\267\332\021\175\236\253\355
\057\214\031\242\034\235\214\314\063\160\165\011\007\376\136\373
\100\244\045\214\057\375\265\121\147\072\250\053\114\237\326\150
\235\140\233\244\305\143\260\356\160\315\050\077\112\164\352\131
\371\165\305\000\006\156\037\260\143\301\052\252\023\135\374\313
\322\145\033\071\061\042\132\302\171\042\135\031\361\113\302\276
\316\034\210\001\164\361\046\101\167\062\071\306\214\120\150\317
\123\205\103\212\017\240\217\356\216\013\222\243\000\100\276\300
\242\131\136\054\241\104\270\376\037\042\323\014\272\320\350\357
\051\344\162\067\112\213\370\026\354\042\062\007\052\043\054\363
\243\327\315\312\251\247\117\162\277\274\021\216\250\033\002\003
\001\000\001\243\066\060\064\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\021\006\003\125\035\016\004
\012\004\010\106\006\337\067\362\302\067\020\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\161
\010\324\046\104\276\200\342\153\102\265\052\120\375\135\350\214
\140\363\234\266\222\201\162\070\262\157\251\076\201\362\303\064
\044\123\241\121\122\310\245\211\323\274\334\333\022\271\333\251
\260\130\357\300\010\146\062\142\343\341\363\243\130\243\167\156
\356\344\241\273\127\021\150\167\063\010\364\315\131\270\352\135
\033\011\306\254\314\215\013\272\315\337\326\232\276\253\166\000
\255\175\026\113\144\134\337\230\076\153\155\136\054\174\071\025
\131\102\067\040\074\237\303\334\177\365\123\066\267\342\307\244
\042\214\172\276\161\275\115\263\150\310\270\251\211\377\161\060
\213\317\221\155\362\205\056\245\112\042\176\162\336\324\256\261
\355\014\357\374\105\175\055\334\044\255\355\171\007\345\255\117
\262\351\122\164\111\270\214\122\372\275\022\344\031\303\374\121
\215\026\343\153\150\156\071\232\337\051\071\245\273\261\241\027
\301\027\343\165\152\374\175\261\162\074\337\301\352\345\243\034
\324\235\131\033\032\164\037\151\052\203\124\044\030\323\356\345
\340\203\127\276\033\342\320\037\255\154\065\276\215\272\137

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "A-Trust-Qual-03"

```
# Issuer:
CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr. Datenverkehr
GmbH,C=AT
# Serial Number: 255636 (0x3e694)
# Subject: CN=A-Trust-Qual-03,OU=A-Trust-Qual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT
# Not Valid Before: Thu Apr 24 22:00:00 2008
# Not Valid After: Tue Apr 24 22:00:00 2018
# Fingerprint (MD5): d8:7e:32:ef:69:f8:bf:72:03:1d:40:82:e8:a7:75:af
# Fingerprint (SHA1): 42:ef:dd:e6:bf:f3:5e:d0:ba:e6:ac:dd:20:4c:50:ae:86:c4:f4:fa
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-Qual-03"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\102\357\335\346\277\363\136\320\272\346\254\335\040\114\120\256
\206\304\364\372
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\330\176\062\357\151\370\277\162\003\035\100\202\350\247\165\257
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\213\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\030\060\026\006\003
\125\004\013\014\017\101\055\124\162\165\163\164\055\121\165\141
\154\055\060\063\061\030\060\026\006\003\125\004\003\014\017\101
\055\124\162\165\163\164\055\121\165\141\154\055\060\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\003\346\224
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "AddTrust External CA Root"
# Issuer: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
# Serial Number: 1 (0x1)
# Subject: CN=AddTrust
```

```
External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE
# Not Valid Before: Tue May 30 10:48:38 2000
# Not Valid After: Sat May 30 10:48:38 2020
# Fingerprint (MD5): 1d:35:54:04:85:78:b0:3f:42:42:4d:bf:20:73:0a:3f
# Fingerprint (SHA1): 02:fa:f3:e2:91:43:54:68:60:78:57:69:4d:f5:e4:5b:68:85:18:68
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AddTrust External CA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\066\060\202\003\036\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061\024
\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165\163
\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035\101
\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141\154
\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060\040
\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164\040
\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157\164
\060\036\027\015\060\060\060\065\063\060\061\060\064\070\063\070
\132\027\015\062\060\060\065\063\060\061\060\064\070\063\070\132
```

\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\267\367\032\063\346\362\000\004\055\071\340\116\133\355
\037\274\154\017\315\265\372\043\266\316\336\233\021\063\227\244
\051\114\175\223\237\275\112\274\223\355\003\032\343\217\317\345
\155\120\132\326\227\051\224\132\200\260\111\172\333\056\225\375
\270\312\277\067\070\055\036\076\221\101\255\160\126\307\360\117
\077\350\062\236\164\312\310\220\124\351\306\137\017\170\235\232
\100\074\016\254\141\252\136\024\217\236\207\241\152\120\334\327
\232\116\257\005\263\246\161\224\234\161\263\120\140\012\307\023
\235\070\007\206\002\250\351\250\151\046\030\220\253\114\260\117
\043\253\072\117\204\330\337\316\237\341\151\157\273\327\102\327
\153\104\344\307\255\356\155\101\137\162\132\161\010\067\263\171
\145\244\131\240\224\067\367\000\057\015\302\222\162\332\320\070
\162\333\024\250\105\304\135\052\175\267\264\326\304\356\254\315
\023\104\267\311\053\335\103\000\045\372\141\271\151\152\130\043
\021\267\247\063\217\126\165\131\365\315\051\327\106\267\012\053
\145\266\323\102\157\025\262\270\173\373\357\351\135\123\325\064
\132\047\002\003\001\000\001\243\201\334\060\201\331\060\035\006
\003\125\035\016\004\026\004\024\255\275\230\172\064\264\046\367
\372\304\046\124\357\003\275\340\044\313\124\032\060\013\006\003
\125\035\017\004\004\003\002\001\006\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\201\231\006\003\125
\035\043\004\201\221\060\201\216\200\024\255\275\230\172\064\264
\046\367\372\304\046\124\357\003\275\340\044\313\124\032\241\163
\244\161\060\157\061\013\060\011\006\003\125\004\006\023\002\123
\105\061\024\060\022\006\003\125\004\012\023\013\101\144\144\124
\162\165\163\164\040\101\102\061\046\060\044\006\003\125\004\013
\023\035\101\144\144\124\162\165\163\164\040\105\170\164\145\162
\156\141\154\040\124\124\120\040\116\145\164\167\157\162\153\061
\042\060\040\006\003\125\004\003\023\031\101\144\144\124\162\165
\163\164\040\105\170\164\145\162\156\141\154\040\103\101\040\122
\157\157\164\202\001\001\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\001\001\000\260\233\340\205\045\302
\326\043\342\017\226\006\222\235\101\230\234\331\204\171\201\331
\036\133\024\007\043\066\145\217\260\330\167\273\254\101\154\107
\140\203\121\260\371\062\075\347\374\366\046\023\307\200\026\245
\277\132\374\207\317\170\171\211\041\232\342\114\007\012\206\065
\274\362\336\121\304\322\226\267\334\176\116\356\160\375\034\071
\353\014\002\121\024\055\216\275\026\340\301\337\106\165\347\044
\255\354\364\102\264\205\223\160\020\147\272\235\006\065\112\030

```
\323\053\172\314\121\102\241\172\143\321\346\273\241\305\053\302
\066\276\023\015\346\275\143\176\171\173\247\011\015\100\253\152
\335\217\212\303\366\366\214\032\102\005\121\324\105\365\237\247
\142\041\150\025\040\103\074\231\347\174\275\044\330\251\221\027
\163\210\077\126\033\061\070\030\264\161\017\232\315\310\016\236
\216\056\033\341\214\230\203\313\037\061\361\104\114\306\004\163
\111\166\140\017\307\370\275\027\200\153\056\351\314\114\016\132
\232\171\017\040\012\056\325\236\143\046\036\125\222\224\330\202
\027\132\173\320\274\307\217\116\206\004
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "AddTrust External CA Root"

Issuer: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE

Serial Number: 1 (0x1)

Subject: CN=AddTrust External CA Root,OU=AddTrust External TTP Network,O=AddTrust AB,C=SE

Not Valid Before: Tue May 30 10:48:38 2000

Not Valid After: Sat May 30 10:48:38 2020

Fingerprint (MD5): 1d:35:54:04:85:78:b0:3f:42:42:4d:bf:20:73:0a:3f

Fingerprint (SHA1): 02:fa:f3:e2:91:43:54:68:60:78:57:69:4d:f5:e4:5b:68:85:18:68

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AddTrust External CA Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\002\372\363\342\221\103\124\150\140\170\127\151\115\365\344\133
\150\205\030\150
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\035\065\124\004\205\170\260\077\102\102\115\277\040\163\012\077
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\157\061\013\060\011\006\003\125\004\006\023\002\123\105\061
\024\060\022\006\003\125\004\012\023\013\101\144\144\124\162\165
\163\164\040\101\102\061\046\060\044\006\003\125\004\013\023\035
\101\144\144\124\162\165\163\164\040\105\170\164\145\162\156\141
\154\040\124\124\120\040\116\145\164\167\157\162\153\061\042\060
\040\006\003\125\004\003\023\031\101\144\144\124\162\165\163\164
\040\105\170\164\145\162\156\141\154\040\103\101\040\122\157\157
\164
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ECRaizEstado"
# Issuer: CN=ECRaizEstado,O=SCEE,C=PT
# Serial Number:42:ea:5b:0a:51:11:26:7c:d8:27:74:b7:df:7f:71
#
# Subject: CN=ECRaizEstado,O=SCEE,C=PT
# Not Valid Before: Fri Jun 23 13:41:27 2006
# Not Valid After: Sun Jun 23 13:41:27 2030
# Fingerprint (MD5): c2:db:ab:8e:96:52:c5:ee:ae:f2:55:00:89:6d:55:95
# Fingerprint (SHA1): 39:13:85:3e:45:c4:39:a2:da:71:8c:df:b6:f3:e0:33:e0:4f:ee:71
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ECRaizEstado"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
```

END

```
CKA_ID UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
```

END

```
CKA_SERIAL_NUMBER
```

```
MULTILINE_OCTAL
```

```
\002\017\102\352\133\012\121\021\046\174\330\047\164\267\337\177
\161
```

END

```
CKA_VALUE MULTILINE_OCTAL
```

```
\060\202\005\156\060\202\003\126\240\003\002\001\002\002\017\102
\352\133\012\121\021\046\174\330\047\164\267\337\177\161\060\015
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\063\061
\013\060\011\006\003\125\004\006\023\002\120\124\061\015\060\013
\006\003\125\004\012\014\004\123\103\105\105\061\025\060\023\006
\003\125\004\003\014\014\105\103\122\141\151\172\105\163\164\141
```

\144\157\060\036\027\015\060\066\060\066\062\063\061\063\064\061
\062\067\132\027\015\063\060\060\066\062\063\061\063\064\061\062
\067\132\060\063\061\013\060\011\006\003\125\004\006\023\002\120
\124\061\015\060\013\006\003\125\004\012\014\004\123\103\105\105
\061\025\060\023\006\003\125\004\003\014\014\105\103\122\141\151
\172\105\163\164\141\144\157\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\333\357\242\103\156\310\251\375
\156\327\337\254\242\222\204\241\310\131\240\014\232\123\376\357
\256\314\031\015\162\212\244\302\063\043\357\347\006\162\352\155
\113\072\101\122\017\311\110\016\055\347\272\144\356\242\072\114
\143\134\146\051\213\337\251\210\305\275\350\361\367\216\113\374
\001\074\104\022\071\052\160\242\300\333\305\242\337\137\307\113
\306\250\334\075\141\174\112\130\301\104\062\223\336\160\231\241
\043\046\126\077\243\341\352\137\060\106\330\170\365\060\243\226
\011\211\260\075\361\206\223\005\266\022\152\030\215\360\245\144
\073\053\207\144\136\075\027\216\013\156\346\230\314\227\070\070
\040\214\160\132\151\053\275\145\215\315\067\131\134\154\321\162
\164\131\006\116\310\267\001\327\167\277\360\110\206\250\263\032
\135\101\324\067\027\021\020\137\112\156\215\165\305\003\100\175
\041\256\000\360\333\374\237\154\072\146\244\337\367\312\337\200
\146\132\331\330\177\024\242\046\031\364\256\013\041\340\312\076
\005\335\026\330\176\131\332\241\260\151\303\235\064\023\372\145
\111\071\207\356\166\057\215\275\074\047\031\003\116\255\016\013
\053\054\306\056\161\023\065\051\127\351\160\334\033\121\352\315
\227\361\225\215\262\206\372\046\006\057\200\032\225\361\230\073
\356\366\345\206\245\316\033\001\345\364\351\063\312\017\125\104
\137\150\212\054\307\133\146\050\335\226\113\203\235\136\035\176
\030\325\376\262\140\373\232\121\150\303\226\214\037\150\113\120
\122\013\066\346\061\047\344\327\051\014\033\332\033\057\341\004
\123\270\324\171\111\260\073\201\136\010\210\042\167\342\051\300
\256\162\252\253\264\162\122\275\154\273\365\272\170\331\234\270
\040\157\060\215\112\235\062\371\364\001\346\142\171\230\102\100
\005\172\157\034\052\077\265\373\337\315\030\100\216\345\020\304
\071\133\126\361\074\127\005\253\322\071\115\077\370\213\043\307
\153\271\100\261\342\376\377\263\034\012\151\037\233\214\017\264
\037\340\012\336\110\375\215\137\217\231\365\001\166\005\066\135
\216\334\063\216\121\156\021\342\101\375\314\267\215\052\137\076
\222\345\362\261\340\244\043\342\242\267\306\215\030\233\051\112
\321\106\177\364\144\040\030\335\002\003\001\000\001\243\177\060
\175\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\035\006\003\125\035\016\004\026\004\024\161\177\065
\336\365\167\161\155\035\022\234\341\220\244\272\360\251\203\217
\200\060\073\006\003\125\035\040\004\064\060\062\060\060\006\004
\125\035\040\000\060\050\060\046\006\010\053\006\001\005\005\007
\002\001\026\032\150\164\164\160\072\057\057\167\167\167\056\145
\143\145\145\056\147\157\166\056\160\164\057\144\160\143\060\015

\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\002
\001\000\214\255\234\162\245\265\147\166\147\070\207\351\072\214
\376\235\131\065\276\220\361\003\000\240\130\330\230\321\277\374
\374\363\120\334\264\145\325\332\272\360\214\056\174\015\346\011
\221\137\115\243\366\135\170\234\130\135\152\160\224\243\257\333
\057\000\311\003\100\153\337\121\003\026\031\214\053\274\231\066
\366\300\255\222\030\023\214\247\355\035\322\337\003\220\005\354
\260\223\230\233\367\115\132\023\370\347\233\367\066\166\336\174
\046\370\021\070\117\111\116\263\163\037\137\047\133\341\236\062
\036\366\300\230\033\331\040\054\134\226\215\206\311\013\105\327
\222\255\212\275\352\127\242\243\126\266\040\074\354\262\307\071
\176\260\200\376\275\121\053\052\264\303\162\151\303\371\107\056
\156\377\234\207\355\334\165\313\020\210\340\264\316\056\016\123
\035\013\350\156\036\102\114\320\276\071\170\165\311\024\336\047
\221\163\252\354\152\200\360\360\027\226\142\117\276\004\313\342
\247\345\135\017\223\105\313\131\110\046\023\336\335\261\365\012
\332\026\261\250\035\217\176\130\033\267\325\011\336\210\153\316
\204\076\250\276\122\142\312\322\241\241\307\313\074\026\340\166
\126\060\077\346\017\153\006\167\376\144\235\132\152\163\174\356
\336\041\351\232\111\227\067\266\204\177\242\221\076\105\373\327
\132\006\305\207\065\334\272\110\114\206\001\010\107\066\266\070
\120\225\021\231\163\321\067\111\012\372\102\117\057\020\124\323
\101\220\372\310\334\273\021\334\015\314\175\174\233\334\016\221
\161\206\115\270\362\025\232\053\070\027\021\241\362\236\250\154
\234\343\316\256\342\346\113\213\362\212\006\073\007\167\002\021
\356\203\352\235\146\206\312\360\142\251\325\127\203\244\025\361
\105\024\376\032\165\177\245\017\334\122\164\131\165\012\370\373
\125\101\251\134\215\061\104\335\315\224\116\063\321\033\101\252
\333\327\241\074\360\305\110\155\105\101\065\265\171\203\346\371
\115\361\126\070\327\277\100\042\373\040\200\343\034\302\131\106
\007\143\002\141\000\073\233\120\273\103\303\260\351\012\232\270
\166\364\107\141\125\144\160\117\067\331\234\021\243\023\262\341
\335\100\102\273\230\327\240\006\213\346\150\127\113\016\070\150
\177\272

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

#

Trust for "ECRaizEstado"

Issuer: CN=ECRaizEstado,O=SCEE,C=PT

Serial Number:42:ea:5b:0a:51:11:26:7c:d8:27:74:b7:df:7f:71

Subject: CN=ECRaizEstado,O=SCEE,C=PT

Not Valid Before: Fri Jun 23 13:41:27 2006

Not Valid After: Sun Jun 23 13:41:27 2030

```

# Fingerprint (MD5): c2:db:ab:8e:96:52:c5:ee:ae:f2:55:00:89:6d:55:95
# Fingerprint (SHA1): 39:13:85:3e:45:c4:39:a2:da:71:8c:df:b6:f3:e0:33:e0:4f:ee:71
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ECRaizEstado"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\071\023\205\076\105\304\071\242\332\161\214\337\266\363\340\063
\340\117\356\161
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\302\333\253\216\226\122\305\356\256\362\125\000\211\155\125\225
END
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\120\124\061
\015\060\013\006\003\125\004\012\014\004\123\103\105\105\061\025
\060\023\006\003\125\004\003\014\014\105\103\122\141\151\172\105
\163\164\141\144\157
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\102\352\133\012\121\021\046\174\330\047\164\267\337\177
\161
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Configuration"
# Issuer: CN=Posta CA Root,CN=AIA,CN=Public Key
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs
# Serial Number:48:fc:7e:f5
# Subject: CN=Posta CA Root,CN=AIA,CN=Public Key
Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs
# Not Valid Before: Mon Oct 20 12:22:08 2008
# Not Valid After: Fri Oct 20 12:52:08 2028
# Fingerprint (MD5): 18:02:b0:01:27:03:6a:19:1b:32:3b:83:de:9a:a9:85
# Fingerprint (SHA1): d6:bf:79:94:f4:2b:e5:fa:29:da:0b:d7:58:7b:59:1f:47:a4:4f:22
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Configuration"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA_SUBJECT MULTILINE_OCTAL

\060\201\256\061\022\060\020\006\012\011\222\046\211\223\362\054
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113
\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157
\164

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\256\061\022\060\020\006\012\011\222\046\211\223\362\054
\144\001\031\026\002\162\163\061\025\060\023\006\012\011\222\046
\211\223\362\054\144\001\031\026\005\160\157\163\164\141\061\022
\060\020\006\012\011\222\046\211\223\362\054\144\001\031\026\002
\143\141\061\026\060\024\006\003\125\004\003\023\015\103\157\156
\146\151\147\165\162\141\164\151\157\156\061\021\060\017\006\003
\125\004\003\023\010\123\145\162\166\151\143\145\163\061\034\060
\032\006\003\125\004\003\023\023\120\165\142\154\151\143\040\113
\145\171\040\123\145\162\166\151\143\145\163\061\014\060\012\006
\003\125\004\003\023\003\101\111\101\061\026\060\024\006\003\125
\004\003\023\015\120\157\163\164\141\040\103\101\040\122\157\157
\164

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\004\110\374\176\365

END

CKA_VALUE MULTILINE_OCTAL

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\157\157\164\060\036\027\015\060\070\061\060\062\060\061\062\062

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CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Configuration"

Issuer: CN=Posta CA Root,CN=AIA,CN=Public Key

Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs

Serial Number:48:fc:7e:f5

Subject: CN=Posta CA Root,CN=AIA,CN=Public Key

Services,CN=Services,CN=Configuration,DC=ca,DC=posta,DC=rs

Not Valid Before: Mon Oct 20 12:22:08 2008

Not Valid After: Fri Oct 20 12:52:08 2028

Fingerprint (MD5): 18:02:b0:01:27:03:6a:19:1b:32:3b:83:de:9a:a9:85

Fingerprint (SHA1): d6:bf:79:94:f4:2b:e5:fa:29:da:0b:d7:58:7b:59:1f:47:a4:4f:22

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL

UTF8 "Configuration"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\326\277\171\224\364\053\345\372\051\332\013\327\130\173\131\037
\107\244\117\042
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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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CKA_ISSUER MULTILINE_OCTAL

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END
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MULTILINE_OCTAL
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CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "StartCom Certification Authority"
# Issuer: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL
# Serial Number: 1 (0x1)
# Subject: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL
# Not Valid Before: Sun Sep 17 19:46:36 2006
# Not Valid After: Wed Sep 17 19:46:36 2036
# Fingerprint (MD5): 22:4d:8f:8a:fc:f7:35:c2:bb:57:34:90:7b:8b:22:16
# Fingerprint (SHA1): 3e:2b:f7:f2:03:1b:96:f3:8c:e6:c4:d8:a8:5d:3e:2d:58:47:6a:0f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "StartCom Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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END
CKA_SERIAL_NUMBER

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MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

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\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143\141
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\056\163\164\141\162\164\143\157\155\056\157\162\147\057\163\146
\163\143\141\055\143\162\154\056\143\162\154\060\202\001\135\006
\003\125\035\040\004\202\001\124\060\202\001\120\060\202\001\114
\006\013\053\006\001\004\001\201\265\067\001\001\001\060\202\001
\073\060\057\006\010\053\006\001\005\005\007\002\001\026\043\150
\164\164\160\072\057\057\143\145\162\164\056\163\164\141\162\164
\143\157\155\056\157\162\147\057\160\157\154\151\143\171\056\160
\144\146\060\065\006\010\053\006\001\005\005\007\002\001\026\051
\150\164\164\160\072\057\057\143\145\162\164\056\163\164\141\162
\164\143\157\155\056\157\162\147\057\151\156\164\145\162\155\145
\144\151\141\164\145\056\160\144\146\060\201\320\006\010\053\006
\001\005\005\007\002\002\060\201\303\060\047\026\040\123\164\141
\162\164\040\103\157\155\155\145\162\143\151\141\154\040\050\123
\164\141\162\164\103\157\155\051\040\114\164\144\056\060\003\002
\001\001\032\201\227\114\151\155\151\164\145\144\040\114\151\141
\142\151\154\151\164\171\054\040\162\145\141\144\040\164\150\145
\040\163\145\143\164\151\157\156\040\052\114\145\147\141\154\040
\114\151\155\151\164\141\164\151\157\156\163\052\040\157\146\040
\164\150\145\040\123\164\141\162\164\103\157\155\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\040\120\157\154\151\143\171\040\141\166\141\151
\154\141\142\154\145\040\141\164\040\150\164\164\160\072\057\057
\143\145\162\164\056\163\164\141\162\164\143\157\155\056\157\162
\147\057\160\157\154\151\143\171\056\160\144\146\060\021\006\011
\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060
\070\006\011\140\206\110\001\206\370\102\001\015\004\053\026\051
\123\164\141\162\164\103\157\155\040\106\162\145\145\040\123\123
\114\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\101\165\164\150\157\162\151\164\171\060\015\006\011\052\206\110

\206\367\015\001\001\005\005\000\003\202\002\001\000\026\154\231
\364\146\014\064\365\320\205\136\175\012\354\332\020\116\070\034
\136\337\246\045\005\113\221\062\301\350\073\361\075\335\104\011
\133\007\111\212\051\313\146\002\267\261\232\367\045\230\011\074
\216\033\341\335\066\207\053\113\273\150\323\071\146\075\240\046
\307\362\071\221\035\121\253\202\173\176\325\316\132\344\342\003
\127\160\151\227\010\371\136\130\246\012\337\214\006\232\105\026
\026\070\012\136\127\366\142\307\172\002\005\346\274\036\265\362
\236\364\251\051\203\370\262\024\343\156\050\207\104\303\220\032
\336\070\251\074\254\103\115\144\105\316\335\050\251\134\362\163
\173\004\370\027\350\253\261\363\056\134\144\156\163\061\072\022
\270\274\263\021\344\175\217\201\121\232\073\215\211\364\115\223
\146\173\074\003\355\323\232\035\232\363\145\120\365\240\320\165
\237\057\257\360\352\202\103\230\370\151\234\211\171\304\103\216
\106\162\343\144\066\022\257\367\045\036\070\211\220\167\176\303
\153\152\271\303\313\104\113\254\170\220\213\347\307\054\036\113
\021\104\310\064\122\047\315\012\135\237\205\301\211\325\032\170
\362\225\020\123\062\335\200\204\146\165\331\265\150\050\373\141
\056\276\204\250\070\300\231\022\206\245\036\147\144\255\006\056
\057\251\160\205\307\226\017\174\211\145\365\216\103\124\016\253
\335\245\200\071\224\140\300\064\311\226\160\054\243\022\365\037
\110\173\275\034\176\153\267\235\220\364\042\073\256\370\374\052
\312\372\202\122\240\357\257\113\125\223\353\301\265\360\042\213
\254\064\116\046\042\004\241\207\054\165\112\267\345\175\023\327
\270\014\144\300\066\322\311\057\206\022\214\043\011\301\033\202
\073\163\111\243\152\127\207\224\345\326\170\305\231\103\143\343
\115\340\167\055\341\145\231\162\151\004\032\107\011\346\017\001
\126\044\373\037\277\016\171\251\130\056\271\304\011\001\176\225
\272\155\000\006\076\262\352\112\020\071\330\320\053\365\277\354
\165\277\227\002\305\011\033\010\334\125\067\342\201\373\067\204
\103\142\040\312\347\126\113\145\352\376\154\301\044\223\044\241
\064\353\005\377\232\042\256\233\175\077\361\145\121\012\246\060
\152\263\364\210\034\200\015\374\162\212\350\203\136

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "StartCom Certification Authority"

Issuer: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL

Serial Number: 1 (0x1)

Subject: CN=StartCom Certification Authority,OU=Secure Digital Certificate Signing,O=StartCom Ltd.,C=IL

Not Valid Before: Sun Sep 17 19:46:36 2006

Not Valid After: Wed Sep 17 19:46:36 2036

Fingerprint (MD5): 22:4d:8f:8a:fc:f7:35:c2:bb:57:34:90:7b:8b:22:16

#

Fingerprint (SHA1): 3e:2b:f7:f2:03:1b:96:f3:8c:e6:c4:d8:a8:5d:3e:2d:58:47:6a:0f

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "StartCom Certification Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\076\053\367\362\003\033\226\363\214\346\304\330\250\135\076\055
\130\107\152\017

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\042\115\217\212\374\367\065\302\273\127\064\220\173\213\042\026

END

CKA_ISSUER MULTILINE_OCTAL

\060\175\061\013\060\011\006\003\125\004\006\023\002\111\114\061
\026\060\024\006\003\125\004\012\023\015\123\164\141\162\164\103
\157\155\040\114\164\144\056\061\053\060\051\006\003\125\004\013
\023\042\123\145\143\165\162\145\040\104\151\147\151\164\141\154
\040\103\145\162\164\151\146\151\143\141\164\145\040\123\151\147
\156\151\156\147\061\051\060\047\006\003\125\004\003\023\040\123
\164\141\162\164\103\157\155\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "VeriSign Class 3 Public Primary Certification Authority - G4"

Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

Serial Number:2f:80:fe:23:8c:0e:22:0f:48:67:12:28:91:87:ac:b3

Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

Not Valid Before: Mon Nov 05 00:00:00 2007

Not Valid After: Mon Jan 18 23:59:59 2038

Fingerprint (MD5): 3a:52:e1:e7:fd:6f:3a:e3:6f:f3:6f:99:1b:f9:22:41

#

Fingerprint (SHA1): 22:d5:d8:df:8f:02:31:d1:8d:f7:9d:b7:cf:8a:2d:64:c9:3f:6c:3a

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G4"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\064

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\064

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\057\200\376\043\214\016\042\017\110\147\022\050\221\207
\254\263

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\204\060\202\003\012\240\003\002\001\002\002\020\057
\200\376\043\214\016\042\017\110\147\022\050\221\207\254\263\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\312\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006
\003\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040
\111\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126
\145\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145
\164\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061

\050\143\051\040\062\060\060\067\040\126\145\162\151\123\151\147
\156\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151
\123\151\147\156\040\103\154\141\163\163\040\063\040\120\165\142
\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\055\040\107\064\060\036\027\015\060\067\061\061
\060\065\060\060\060\060\060\060\132\027\015\063\070\060\061\061
\070\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004
\012\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143
\056\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151
\123\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157
\162\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051
\040\062\060\060\067\040\126\145\162\151\123\151\147\156\054\040
\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157
\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105
\060\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147
\156\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143
\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\064\060\166\060\020\006\007\052\206\110\316\075
\002\001\006\005\053\201\004\000\042\003\142\000\004\247\126\172
\174\122\332\144\233\016\055\134\330\136\254\222\075\376\001\346
\031\112\075\024\003\113\372\140\047\040\331\203\211\151\372\124
\306\232\030\136\125\052\144\336\006\366\215\112\073\255\020\074
\145\075\220\210\004\211\340\060\141\263\256\135\001\247\173\336
\174\262\276\312\145\141\000\206\256\332\217\173\320\211\255\115
\035\131\232\101\261\274\107\200\334\236\142\303\371\243\201\262
\060\201\257\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\155\006\010\053\006\001\005\005\007\001\014
\004\141\060\137\241\135\240\133\060\131\060\127\060\125\026\011
\151\155\141\147\145\057\147\151\146\060\041\060\037\060\007\006
\005\053\016\003\002\032\004\024\217\345\323\032\206\254\215\216
\153\303\317\200\152\324\110\030\054\173\031\056\060\045\026\043
\150\164\164\160\072\057\057\154\157\147\157\056\166\145\162\151
\163\151\147\156\056\143\157\155\057\166\163\154\157\147\157\056
\147\151\146\060\035\006\003\125\035\016\004\026\004\024\263\026
\221\375\356\246\156\344\265\056\111\217\207\170\201\200\354\345
\261\265\060\012\006\010\052\206\110\316\075\004\003\003\003\150
\000\060\145\002\060\146\041\014\030\046\140\132\070\173\126\102
\340\247\374\066\204\121\221\040\054\166\115\103\075\304\035\204
\043\320\254\326\174\065\006\316\315\151\275\220\015\333\154\110
\102\035\016\252\102\002\061\000\234\075\110\071\043\071\130\032
\025\022\131\152\236\357\325\131\262\035\122\054\231\161\315\307
\051\337\033\052\141\173\161\321\336\363\300\345\015\072\112\252

```
\055\247\330\206\052\335\056\020
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER
CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "VeriSign Class 3 Public Primary Certification Authority - G4"
# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Serial Number:2f:80:fe:23:8c:0e:22:0f:48:67:12:28:91:87:ac:b3
# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G4,OU=(c) 2007 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 3a:52:e1:e7:fd:6f:3a:e3:6f:f3:6f:99:1b:f9:22:41
# Fingerprint (SHA1): 22:d5:d8:df:8f:02:31:d1:8d:f7:9d:b7:cf:8a:2d:64:c9:3f:6c:3a
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign
Class 3 Public Primary Certification Authority - G4"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\042\325\330\337\217\002\061\321\215\367\235\267\317\212\055\144
\311\077\154\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\072\122\341\347\375\157\072\343\157\363\157\231\033\371\042\101
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\067\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\064
END
CKA_SERIAL_NUMBER
```

MULTILINE_OCTAL

\002\020\057\200\376\043\214\016\042\017\110\147\022\050\221\207
\254\263

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "thawte Primary Root CA - G2"

Issuer: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US

Serial Number:35:fc:26:5c:d9:84:4f:c9:3d:26:3d:57:9b:ae:d7:56

Subject: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\,
Inc.,C=US

Not Valid Before: Mon Nov 05 00:00:00 2007

Not Valid After: Mon Jan 18 23:59:59 2038

Fingerprint (MD5): 74:9d:ea:60:24:c4:fd:22:53:3e:cc:3a:72:d9:29:4f

#

Fingerprint (SHA1): aa:db:bc:22:23:8f:c4:01:a1:27:bb:38:dd:f4:1d:db:08:9e:f0:12

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "thawte Primary Root CA - G2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040

\103\101\040\055\040\107\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\065\374\046\134\331\204\117\311\075\046\075\127\233\256
\327\126

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\210\060\202\002\015\240\003\002\001\002\002\020\065
\374\046\134\331\204\117\311\075\046\075\127\233\256\327\126\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\204\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006
\003\125\004\012\023\014\164\150\141\167\164\145\054\040\111\156
\143\056\061\070\060\066\006\003\125\004\013\023\057\050\143\051
\040\062\060\060\067\040\164\150\141\167\164\145\054\040\111\156
\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151
\172\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042
\006\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162
\151\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040
\107\062\060\036\027\015\060\067\061\061\060\065\060\060\060\060
\060\060\132\027\015\063\070\060\061\061\070\062\063\065\071\065
\071\132\060\201\204\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\025\060\023\006\003\125\004\012\023\014\164\150\141
\167\164\145\054\040\111\156\143\056\061\070\060\066\006\003\125
\004\013\023\057\050\143\051\040\062\060\060\067\040\164\150\141
\167\164\145\054\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\044\060\042\006\003\125\004\003\023\033\164\150
\141\167\164\145\040\120\162\151\155\141\162\171\040\122\157\157
\164\040\103\101\040\055\040\107\062\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\242\325\234\202\173\225\235\361\122\170\207\376\212\026\277
\005\346\337\243\002\117\015\007\306\000\121\272\014\002\122\055
\042\244\102\071\304\376\217\352\311\301\276\324\115\377\237\172
\236\342\261\174\232\255\247\206\011\163\207\321\347\232\343\172
\245\252\156\373\272\263\160\300\147\210\242\065\324\243\232\261
\375\255\302\357\061\372\250\271\363\373\010\306\221\321\373\051
\225\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004
\024\232\330\000\060\000\347\153\177\205\030\356\213\266\316\212
\014\370\021\341\273\060\012\006\010\052\206\110\316\075\004\003
\003\003\151\000\060\146\002\061\000\335\370\340\127\107\133\247
\346\012\303\275\365\200\212\227\065\015\033\211\074\124\206\167
\050\312\241\364\171\336\265\346\070\260\360\145\160\214\177\002
\124\302\277\377\330\241\076\331\317\002\061\000\304\215\224\374
\334\123\322\334\235\170\026\037\025\063\043\123\122\343\132\061
\135\235\312\256\275\023\051\104\015\047\133\250\347\150\234\022

\367\130\077\056\162\002\127\243\217\241\024\056

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "thawte Primary Root CA - G2"

Issuer: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\, Inc.,C=US

Serial Number:35:fc:26:5c:d9:84:4f:c9:3d:26:3d:57:9b:ae:d7:56

Subject: CN=thawte Primary Root CA - G2,OU=(c) 2007 thawte\, Inc. - For authorized use only,O=thawte\, Inc.,C=US

Not Valid Before: Mon Nov 05 00:00:00 2007

Not Valid After: Mon Jan 18 23:59:59 2038

Fingerprint (MD5): 74:9d:ea:60:24:c4:fd:22:53:3e:cc:3a:72:d9:29:4f

Fingerprint (SHA1): aa:db:bc:22:23:8f:c4:01:a1:27:bb:38:dd:f4:1d:db:08:9e:f0:12

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "thawte Primary Root CA - G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\252\333\274\042\043\217\304\001\241\047\273\070\335\364\035\333
\010\236\360\022

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\164\235\352\140\044\304\375\042\123\076\314\072\162\331\051\117
END

CKA_ISSUER MULTILINE_OCTAL

\060\201\204\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\070\060\066\006\003\125\004\013
\023\057\050\143\051\040\062\060\060\067\040\164\150\141\167\164
\145\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\044\060\042\006\003\125\004\003\023\033\164\150\141\167
\164\145\040\120\162\151\155\141\162\171\040\122\157\157\164\040
\103\101\040\055\040\107\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\065\374\046\134\331\204\117\311\075\046\075\127\233\256
\327\126

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "GeoTrust Primary Certification Authority - G2"

Issuer: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US

Serial Number:3c:b2:f4:48:0a:00:e2:fe:eb:24:3b:5e:60:3e:c3:6b

Subject: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US

Not Valid Before: Mon Nov 05 00:00:00 2007

Not Valid After: Mon Jan 18 23:59:59 2038

Fingerprint (MD5): 01:5e:d8:6b:bd:6f:3d:8e:a1:31:f8:12:e0:98:73:6a

Fingerprint (SHA1): 8d:17:84:d5:37:f3:03:7d:ec:70:fe:57:8b:51:9a:99:e6:10:d7:b0

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\074\262\364\110\012\000\342\376\353\044\073\136\140\076
\303\153

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\256\060\202\002\065\240\003\002\001\002\002\020\074
\262\364\110\012\000\342\376\353\044\073\136\140\076\303\153\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\230\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\026\060\024\006
\003\125\004\012\023\015\107\145\157\124\162\165\163\164\040\111
\156\143\056\061\071\060\067\006\003\125\004\013\023\060\050\143
\051\040\062\060\060\067\040\107\145\157\124\162\165\163\164\040
\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157
\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061\066
\060\064\006\003\125\004\003\023\055\107\145\157\124\162\165\163
\164\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062\060\036\027\015\060\067\061\061\060\065
\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062
\063\065\071\065\071\132\060\201\230\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023
\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061\071
\060\067\006\003\125\004\013\023\060\050\143\051\040\062\060\060
\067\040\107\145\157\124\162\165\163\164\040\111\156\143\056\040
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144
\040\165\163\145\040\157\156\154\171\061\066\060\064\006\003\125
\004\003\023\055\107\145\157\124\162\165\163\164\040\120\162\151
\155\141\162\171\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005
\053\201\004\000\042\003\142\000\004\025\261\350\375\003\025\103
\345\254\353\207\067\021\142\357\322\203\066\122\175\105\127\013
\112\215\173\124\073\072\156\137\025\002\300\120\246\317\045\057
\175\312\110\270\307\120\143\034\052\041\010\174\232\066\330\013
\376\321\046\305\130\061\060\050\045\363\135\135\243\270\266\245
\264\222\355\154\054\237\353\335\103\211\242\074\113\110\221\035
\120\354\046\337\326\140\056\275\041\243\102\060\100\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035
\006\003\125\035\016\004\026\004\024\025\137\065\127\121\125\373
\045\262\255\003\151\374\001\243\372\276\021\125\325\060\012\006
\010\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060
\144\226\131\246\350\011\336\213\272\372\132\210\210\360\037\221
\323\106\250\362\112\114\002\143\373\154\137\070\333\056\101\223
\251\016\346\235\334\061\034\262\240\247\030\034\171\341\307\066
\002\060\072\126\257\232\164\154\366\373\203\340\063\323\010\137
\241\234\302\133\237\106\326\266\313\221\006\143\242\006\347\063
\254\076\250\201\022\320\313\272\320\222\013\266\236\226\252\004

```
\017\212
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "GeoTrust Primary Certification Authority - G2"
# Issuer: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
# Serial Number:3c:b2:f4:48:0a:00:e2:fe:eb:24:3b:5e:60:3e:c3:6b
#
Subject: CN=GeoTrust Primary Certification Authority - G2,OU=(c) 2007 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
# Not Valid Before: Mon Nov 05 00:00:00 2007
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 01:5e:d8:6b:bd:6f:3d:8e:a1:31:f8:12:e0:98:73:6a
# Fingerprint (SHA1): 8d:17:84:d5:37:f3:03:7d:ec:70:fe:57:8b:51:9a:99:e6:10:d7:b0
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\215\027\204\325\067\363\003\175\354\160\376\127\213\121\232\231
\346\020\327\260
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\001\136\330\153\275\157\075\216\241\061\370\022\340\230\163\152
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\067\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\074\262\364\110\012\000\342\376\353\044\073\136\140\076
\303\153
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
```

```
# Certificate "VeriSign Universal Root Certification Authority"
```

```
# Issuer: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized
use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
```

```
# Serial Number:40:1a:c4:64:21:b3:13:21:03:0e:bb:e4:12:1a:c5:1d
```

```
# Subject: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use
only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
```

```
# Not Valid Before: Wed Apr 02 00:00:00 2008
```

```
# Not Valid After: Tue Dec 01 23:59:59 2037
```

```
# Fingerprint (MD5): 8e:ad:b5:01:aa:4d:81:e4:8c:1d:d1:e1:14:00:95:19
```

```
# Fingerprint (SHA1): 36:79:ca:35:66:87:72:30:4d:30:a5:fb:87:3b:0f:a7:7b:b7:0d:54
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "VeriSign Universal Root Certification Authority"
```

```
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

```
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
```

```
END
```

```
CKA_ID
```

```
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
```

```
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023
```

\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\100\032\304\144\041\263\023\041\003\016\273\344\022\032
\305\035

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\271\060\202\003\241\240\003\002\001\002\002\020\100
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\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\275\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013
\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004
\013\023\061\050\143\051\040\062\060\060\070\040\126\145\162\151
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040
\157\156\154\171\061\070\060\066\006\003\125\004\003\023\057\126
\145\162\151\123\151\147\156\040\125\156\151\166\145\162\163\141
\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036
\027\015\060\070\060\064\060\062\060\060\060\060\060\132\027
\015\063\067\061\062\060\061\062\063\065\071\065\071\132\060\201
\275\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013
\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004
\013\023\061\050\143\051\040\062\060\060\070\040\126\145\162\151
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040
\157\156\154\171\061\070\060\066\006\003\125\004\003\023\057\126
\145\162\151\123\151\147\156\040\125\156\151\166\145\162\163\141
\154\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\307
\141\067\136\261\001\064\333\142\327\025\233\377\130\132\214\043
\043\326\140\216\221\327\220\230\203\172\346\130\031\070\214\305
\366\345\144\205\264\242\161\373\355\275\271\332\315\115\000\264
\310\055\163\245\307\151\161\225\037\071\074\262\104\007\234\350
\016\372\115\112\304\041\337\051\141\217\062\042\141\202\305\207
\037\156\214\174\137\026\040\121\104\321\160\117\127\352\343\034
\343\314\171\356\130\330\016\302\263\105\223\300\054\347\232\027

\053\173\000\067\172\101\063\170\341\063\342\363\020\032\177\207
\054\276\366\365\367\102\342\345\277\207\142\211\137\000\113\337
\305\335\344\165\104\062\101\072\036\161\156\151\313\013\165\106
\010\321\312\322\053\225\320\317\373\271\100\153\144\214\127\115
\374\023\021\171\204\355\136\124\366\064\237\010\001\363\020\045
\006\027\112\332\361\035\172\146\153\230\140\146\244\331\357\322
\056\202\361\360\357\011\352\104\311\025\152\342\003\156\063\323
\254\237\125\000\307\366\010\152\224\271\137\334\340\063\361\204
\140\371\133\047\021\264\374\026\362\273\126\152\200\045\215\002
\003\001\000\001\243\201\262\060\201\257\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\155\006\010\053
\006\001\005\005\007\001\014\004\141\060\137\241\135\240\133\060
\131\060\127\060\125\026\011\151\155\141\147\145\057\147\151\146
\060\041\060\037\060\007\006\005\053\016\003\002\032\004\024\217
\345\323\032\206\254\215\216\153\303\317\200\152\324\110\030\054
\173\031\056\060\045\026\043\150\164\164\160\072\057\057\154\157
\147\157\056\166\145\162\151\163\151\147\156\056\143\157\155\057
\166\163\154\157\147\157\056\147\151\146\060\035\006\003\125\035
\016\004\026\004\024\266\167\372\151\110\107\237\123\022\325\302
\352\007\062\166\007\321\227\007\031\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\003\202\001\001\000\112\370\370
\260\003\346\054\147\173\344\224\167\143\314\156\114\371\175\016
\015\334\310\271\065\271\160\117\143\372\044\372\154\203\214\107
\235\073\143\363\232\371\166\062\225\221\261\167\274\254\232\276
\261\344\061\041\306\201\225\126\132\016\261\302\324\261\246\131
\254\361\143\313\270\114\035\131\220\112\357\220\026\050\037\132
\256\020\373\201\120\070\014\154\314\361\075\303\365\143\343\263
\343\041\311\044\071\351\375\025\146\106\364\033\021\320\115\163
\243\175\106\371\075\355\250\137\142\324\361\077\370\340\164\127
\053\030\235\201\264\304\050\332\224\227\245\160\353\254\035\276
\007\021\360\325\333\335\345\214\360\325\062\260\203\346\127\342
\217\277\276\241\252\277\075\035\265\324\070\352\327\260\134\072
\117\152\077\217\300\146\154\143\252\351\331\244\026\364\201\321
\225\024\016\175\315\225\064\331\322\217\160\163\201\173\234\176
\275\230\141\330\105\207\230\220\305\353\206\060\306\065\277\360
\377\303\125\210\203\113\357\005\222\006\161\362\270\230\223\267
\354\315\202\141\361\070\346\117\227\230\052\132\215

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "VeriSign Universal Root Certification Authority"

Issuer: CN=VeriSign Universal Root Certification Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

```
# Serial Number:40:1a:c4:64:21:b3:13:21:03:0e:bb:e4:12:1a:c5:1d
# Subject: CN=VeriSign Universal Root Certification
  Authority,OU=(c) 2008 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\,
  Inc.,C=US
# Not Valid Before: Wed Apr 02 00:00:00 2008
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): 8e:ad:b5:01:aa:4d:81:e4:8c:1d:d1:e1:14:00:95:19
# Fingerprint (SHA1): 36:79:ca:35:66:87:72:30:4d:30:a5:fb:87:3b:0f:a7:7b:b7:0d:54
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Universal Root Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\066\171\312\065\146\207\162\060\115\060\245\373\207\073\017\247
\173\267\015\124
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\216\255\265\001\252\115\201\344\214\035\321\341\024\000\225\031
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\275\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\070\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\070\060\066\006\003\125\004\003\023
\057\126\145\162\151\123\151\147\156\040\125\156\151\166\145\162
\163\141\154\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\020\100\032\304\144\041\263\023\041\003\016\273\344\022\032
\305\035
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "thawte Primary
  Root CA - G3"
# Issuer: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification
```



```
Services Division,O=thawte\, Inc.,C=US
# Serial Number:60:01:97:b7:46:a7:ea:b4:b4:9a:d6:4b:2f:f7:90:fb
# Subject: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification
Services Division,O=thawte\, Inc.,C=US
# Not Valid Before: Wed Apr 02 00:00:00 2008
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (MD5): fb:1b:5d:43:8a:94:cd:44:c6:76:f2:43:4b:47:e7:31
# Fingerprint (SHA1): f1:8b:53:8d:1b:e9:03:b6:a6:f0:56:43:5b:17:15:89:ca:f3:6b:f2
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107
\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
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\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107
\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\140\001\227\267\106\247\352\264\264\232\326\113\057\367
\220\373
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END

CKA_VALUE MULTILINE_OCTAL

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\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\256\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025
\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145\054
\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023\037
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156\061
\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062\060
\060\070\040\164\150\141\167\164\145\054\040\111\156\143\056\040
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144
\040\165\163\145\040\157\156\154\171\061\044\060\042\006\003\125
\004\003\023\033\164\150\141\167\164\145\040\120\162\151\155\141
\162\171\040\122\157\157\164\040\103\101\040\055\040\107\063\060
\036\027\015\060\070\060\064\060\062\060\060\060\060\060\132
\027\015\063\067\061\062\060\061\062\063\065\071\065\071\132\060
\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145
\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023
\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123
\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156
\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062
\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143\056
\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145
\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006\003
\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151\155
\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107\063
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\262\277\047\054\373\333\330\133\335\170\173\033\236\167\146
\201\313\076\274\174\256\363\246\047\232\064\243\150\061\161\070
\063\142\344\363\161\146\171\261\251\145\243\245\213\325\217\140
\055\077\102\314\252\153\062\300\043\313\054\101\335\344\337\374
\141\234\342\163\262\042\225\021\103\030\137\304\266\037\127\154
\012\005\130\042\310\066\114\072\174\245\321\317\206\257\210\247
\104\002\023\164\161\163\012\102\131\002\370\033\024\153\102\337
\157\137\272\153\202\242\235\133\347\112\275\036\001\162\333\113
\164\350\073\177\177\175\037\004\264\046\233\340\264\132\254\107
\075\125\270\327\260\046\122\050\001\061\100\146\330\331\044\275
\366\052\330\354\041\111\134\233\366\172\351\177\125\065\176\226
\153\215\223\223\047\313\222\273\352\254\100\300\237\302\370\200
\317\135\364\132\334\316\164\206\246\076\154\013\123\312\275\222
\316\031\006\162\346\014\134\070\151\307\004\326\274\154\316\133
\366\367\150\234\334\045\025\110\210\241\351\251\370\230\234\340
\363\325\061\050\141\021\154\147\226\215\071\231\313\302\105\044
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\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125
\035\016\004\026\004\024\255\154\252\224\140\234\355\344\377\372
\076\012\164\053\143\003\367\266\131\277\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\032\100
\330\225\145\254\011\222\211\306\071\364\020\345\251\016\146\123
\135\170\336\372\044\221\273\347\104\121\337\306\026\064\012\357
\152\104\121\352\053\007\212\003\172\303\353\077\012\054\122\026
\240\053\103\271\045\220\077\160\251\063\045\155\105\032\050\073
\047\317\252\303\051\102\033\337\073\114\300\063\064\133\101\210
\277\153\053\145\257\050\357\262\365\303\252\146\316\173\126\356
\267\310\313\147\301\311\234\032\030\270\304\303\111\003\361\140
\016\120\315\106\305\363\167\171\367\266\025\340\070\333\307\057
\050\240\014\077\167\046\164\331\045\022\332\061\332\032\036\334
\051\101\221\042\074\151\247\273\002\362\266\134\047\003\211\364
\006\352\233\344\162\202\343\241\011\301\351\000\031\323\076\324
\160\153\272\161\246\252\130\256\364\273\351\154\266\357\207\314
\233\273\377\071\346\126\141\323\012\247\304\134\114\140\173\005
\167\046\172\277\330\007\122\054\142\367\160\143\331\071\274\157
\034\302\171\334\166\051\257\316\305\054\144\004\136\210\066\156
\061\324\100\032\142\064\066\077\065\001\256\254\143\240
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft

Code Signing Only Certificate

Trust for "thawte Primary Root CA - G3"

Issuer: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

Serial Number:60:01:97:b7:46:a7:ea:b4:b4:9a:d6:4b:2f:f7:90:fb

Subject: CN=thawte Primary Root CA - G3,OU=(c) 2008 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

Not Valid Before: Wed Apr 02 00:00:00 2008

Not Valid After: Tue Dec 01 23:59:59 2037

Fingerprint (MD5): fb:1b:5d:43:8a:94:cd:44:c6:76:f2:43:4b:47:e7:31

Fingerprint (SHA1): f1:8b:53:8d:1b:e9:03:b6:a6:f0:56:43:5b:17:15:89:ca:f3:6b:f2

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "thawte Primary Root CA - G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\361\213\123\215\033\351\003\266\246\360\126\103\133\027\025\211
\312\363\153\362
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\373\033\135\103\212\224\315\104\306\166\362\103\113\107\347\061
END

CKA_ISSUER
MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\070\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\044\060\042\006
\003\125\004\003\023\033\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101\040\055\040\107
\063
END

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\140\001\227\267\106\247\352\264\264\232\326\113\057\367
\220\373
END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "GeoTrust Primary Certification Authority - G3"
Issuer: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
Serial Number:15:ac:6e:94:19:b2:79:4b:41:f6:27:a9:c3:18:0f:1f
Subject: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
Not Valid Before: Wed Apr 02 00:00:00 2008
Not Valid After: Tue Dec 01 23:59:59 2037
Fingerprint (MD5): b5:e8:34:36:c9:10:44:58:48:70:6d:2e:83:d4:b8:05
Fingerprint (SHA1): 03:9e:ed:b8:0b:e7:a0:3c:69:53:89:3b:20:d2:d9:32:3a:4c:2a:fd

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary
Certification Authority - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123

\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\063

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\025\254\156\224\031\262\171\113\101\366\047\251\303\030
\017\037

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\376\060\202\002\346\240\003\002\001\002\002\020\025
\254\156\224\031\262\171\113\101\366\047\251\303\030\017\037\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\230\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\071\060\067\006\003\125\004\013\023
\060\050\143\051\040\062\060\060\070\040\107\145\157\124\162\165
\163\164\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\066\060\064\006\003\125\004\003\023\055\107\145\157\124
\162\165\163\164\040\120\162\151\155\141\162\171\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\040\055\040\107\063\060\036\027\015\060\070\060
\064\060\062\060\060\060\060\060\060\132\027\015\063\067\061\062
\060\061\062\063\065\071\065\071\132\060\201\230\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\026\060\024\006\003\125
\004\012\023\015\107\145\157\124\162\165\163\164\040\111\156\143
\056\061\071\060\067\006\003\125\004\013\023\060\050\143\051\040
\062\060\060\070\040\107\145\157\124\162\165\163\164\040\111\156

\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151
\172\145\144\040\165\163\145\040\157\156\154\171\061\066\060\064
\006\003\125\004\003\023\055\107\145\157\124\162\165\163\164\040
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\334\342\136\142\130\035\063\127\071\062\063
\372\353\313\207\214\247\324\112\335\006\210\352\144\216\061\230
\245\070\220\036\230\317\056\143\053\360\106\274\104\262\211\241
\300\050\014\111\160\041\225\237\144\300\246\223\022\002\145\046
\206\306\245\211\360\372\327\204\240\160\257\117\032\227\077\006
\104\325\311\353\162\020\175\344\061\050\373\034\141\346\050\007
\104\163\222\042\151\247\003\210\154\235\143\310\122\332\230\047
\347\010\114\160\076\264\311\022\301\305\147\203\135\063\363\003
\021\354\152\320\123\342\321\272\066\140\224\200\273\141\143\154
\133\027\176\337\100\224\036\253\015\302\041\050\160\210\377\326
\046\154\154\140\004\045\116\125\176\175\357\277\224\110\336\267
\035\335\160\215\005\137\210\245\233\362\302\356\352\321\100\101
\155\142\070\035\126\006\305\003\107\121\040\031\374\173\020\013
\016\142\256\166\125\277\137\167\276\076\111\001\123\075\230\045
\003\166\044\132\035\264\333\211\352\171\345\266\263\073\077\272
\114\050\101\177\006\254\152\216\301\320\366\005\035\175\346\102
\206\343\245\325\107\002\003\001\000\001\243\102\060\100\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\035\006\003\125\035\016\004\026\004\024\304\171\312\216\241\116
\003\035\034\334\153\333\061\133\224\076\077\060\177\055\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001
\001\000\055\305\023\317\126\200\173\172\170\275\237\256\054\231
\347\357\332\337\224\136\011\151\247\347\156\150\214\275\162\276
\107\251\016\227\022\270\112\361\144\323\071\337\045\064\324\301
\315\116\201\360\017\004\304\044\263\064\226\306\246\252\060\337
\150\141\163\327\371\216\205\211\357\016\136\225\050\112\052\047
\217\020\216\056\174\206\304\002\236\332\014\167\145\016\104\015
\222\375\375\263\026\066\372\021\015\035\214\016\007\211\152\051
\126\367\162\364\335\025\234\167\065\146\127\253\023\123\330\216
\301\100\305\327\023\026\132\162\307\267\151\001\304\172\261\203
\001\150\175\215\101\241\224\030\301\045\134\374\360\376\203\002
\207\174\015\015\317\056\010\134\112\100\015\076\354\201\141\346
\044\333\312\340\016\055\007\262\076\126\334\215\365\101\205\007
\110\233\014\013\313\111\077\175\354\267\375\313\215\147\211\032
\253\355\273\036\243\000\010\010\027\052\202\134\061\135\106\212
\055\017\206\233\164\331\105\373\324\100\261\172\252\150\055\206
\262\231\042\341\301\053\307\234\370\363\137\250\202\022\353\031
\021\055

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Trust for "GeoTrust Primary Certification Authority - G3"
Issuer: CN=GeoTrust Primary
Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use only,O=GeoTrust Inc.,C=US
Serial Number:15:ac:6e:94:19:b2:79:4b:41:f6:27:a9:c3:18:0f:1f
Subject: CN=GeoTrust Primary Certification Authority - G3,OU=(c) 2008 GeoTrust Inc. - For authorized use
only,O=GeoTrust Inc.,C=US
Not Valid Before: Wed Apr 02 00:00:00 2008
Not Valid After: Tue Dec 01 23:59:59 2037
Fingerprint (MD5): b5:e8:34:36:c9:10:44:58:48:70:6d:2e:83:d4:b8:05
Fingerprint (SHA1): 03:9e:ed:b8:0b:e7:a0:3c:69:53:89:3b:20:d2:d9:32:3a:4c:2a:fd
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\003\236\355\270\013\347\240\074\151\123\211\073\040\322\331\062
\072\114\052\375
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\265\350\064\066\311\020\104\130\110\160\155\056\203\324\270\005
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\071\060\067\006\003\125\004
\013\023\060\050\143\051\040\062\060\060\070\040\107\145\157\124
\162\165\163\164\040\111\156\143\056\040\055\040\106\157\162\040
\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040\157
\156\154\171\061\066\060\064\006\003\125\004\003\023\055\107\145
\157\124\162\165\163\164\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\025\254\156\224\031\262\171\113\101\366\047\251\303\030
\017\037
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
#
Certificate "E-ME SSI (RCA)"
# Issuer: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
# Serial Number:2e:ef:db:fb:d8:89:3d:8f:49:1c:93:72:fe:45:df:ed
# Subject: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV
# Not Valid Before: Tue May 19 08:45:56 2009
# Not Valid After: Wed May 19 08:48:15 2027
# Fingerprint (MD5): cb:bd:c3:68:2d:b3:cb:18:59:d3:29:52:e8:c6:64:89
# Fingerprint (SHA1): c9:32:1d:e6:b5:a8:26:66:cf:69:71:a1:8a:56:f2:d3:a8:67:56:02
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-ME SSI (RCA)"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\056\357\333\373\330\211\075\217\111\034\223\162\376\105
\337\355
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\340\060\202\003\310\240\003\002\001\002\002\020\056
\357\333\373\330\211\075\217\111\034\223\162\376\105\337\355\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\120
\061\013\060\011\006\003\125\004\006\023\002\114\126\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\164\151\146\151\153
\141\143\151\152\141\163\040\160\141\153\141\154\160\157\152\165
\155\165\040\144\141\154\141\061\027\060\025\006\003\125\004\003
\023\016\105\055\115\105\040\123\123\111\040\050\122\103\101\051
```


\060\036\027\015\060\071\060\065\061\071\060\070\064\065\065\066
\132\027\015\062\067\060\065\061\071\060\070\064\070\061\065\132
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\304\004\153\000\303\260\340\056\073\350\123\005\005
\010\276\310\204\047\125\326\035\212\022\342\027\042\132\154\377
\263\335\266\231\303\312\301\352\371\330\045\265\337\072\235\235
\077\122\305\351\362\254\277\211\164\212\124\256\116\317\156\362
\136\256\332\275\022\007\231\225\317\144\253\376\231\221\144\131
\214\311\276\104\152\061\233\230\352\272\352\321\041\016\050\013
\071\233\343\326\212\246\367\002\272\077\075\331\131\364\171\231
\336\323\044\233\213\160\033\052\204\326\345\011\017\046\046\044
\130\217\045\136\363\305\235\164\211\245\066\305\345\122\262\353
\350\206\223\107\156\247\051\207\244\176\334\264\243\313\062\126
\367\105\200\332\134\307\057\240\247\327\357\365\374\265\250\315
\204\225\142\370\251\053\043\073\155\323\267\222\310\352\301\274
\024\115\350\153\234\026\172\323\354\007\373\007\045\020\117\024
\207\173\222\066\316\126\202\145\113\023\046\006\330\243\243\246
\337\302\172\373\173\065\005\242\023\075\076\166\274\034\127\203
\003\121\307\064\336\132\365\074\275\066\045\234\026\017\115\316
\350\015\032\313\135\103\242\024\157\272\174\140\324\002\205\166
\305\153\052\270\105\261\134\167\107\021\255\240\045\251\146\221
\214\121\027\155\141\125\012\031\077\233\002\377\304\365\326\322
\263\351\045\123\341\004\075\217\042\320\242\145\345\256\247\264
\340\035\221\152\302\206\222\367\072\135\023\247\172\114\102\337
\132\263\112\210\104\054\357\107\272\251\257\326\317\142\163\212
\006\042\026\054\302\354\037\006\250\323\107\120\131\062\022\345
\271\235\142\065\236\312\136\012\264\235\043\210\302\323\117\054
\054\311\223\350\176\270\011\354\246\331\335\143\341\311\250\152
\150\334\204\121\254\132\022\347\073\246\265\007\012\261\252\116
\263\264\242\127\337\067\154\026\116\253\231\062\172\360\234\043
\045\213\312\232\250\214\340\070\041\264\316\367\154\141\310\342
\014\022\131\006\201\046\066\132\017\065\163\324\026\105\375\336
\225\336\326\113\134\237\163\331\276\031\275\347\277\344\125\152
\310\153\104\367\307\270\063\210\171\031\015\006\144\350\257\013
\241\165\014\122\145\272\012\043\225\161\367\143\374\176\345\214
\217\314\321\002\003\001\000\001\243\201\265\060\201\262\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\030
\006\010\053\006\001\005\005\007\001\003\004\014\060\012\060\010
\006\006\004\000\216\106\001\001\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\073\046\003\272\317\343\131\106\102\120\255\024
\234\277\003\073\357\326\076\061\060\020\006\011\053\006\001\004

\001\202\067\025\001\004\003\002\001\000\060\104\006\003\125\035
\040\004\075\060\073\060\071\006\013\053\006\001\004\001\201\372
\075\001\001\001\060\052\060\050\006\010\053\006\001\005\005\007
\002\001\026\034\150\164\164\160\072\057\057\167\167\167\056\145
\155\145\056\154\166\057\162\145\160\157\163\151\164\157\162\171
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\002\001\000\205\346\246\224\344\331\106\137\235\277\223\273
\371\153\166\144\050\256\277\074\105\052\212\223\171\154\323\113
\210\206\040\153\042\046\070\075\034\023\252\353\141\227\154\056
\076\127\234\154\103\242\336\155\100\304\061\362\155\272\106\026
\263\055\306\273\246\334\345\057\261\330\301\325\221\036\021\177
\373\137\241\334\035\141\370\155\233\141\360\342\077\053\161\325
\015\313\336\337\145\077\240\157\225\233\172\313\333\065\067\051
\135\136\235\271\124\261\254\140\022\345\143\331\315\257\122\033
\005\226\023\174\332\044\165\001\255\324\236\245\313\301\022\105
\117\127\257\043\277\051\274\352\216\255\170\370\207\043\350\110
\313\100\250\276\135\063\326\354\306\006\103\302\147\052\350\343
\205\056\140\236\104\057\053\117\061\261\007\235\225\041\325\052
\222\257\200\221\323\307\051\275\315\361\025\014\237\001\356\370
\055\073\244\007\160\111\171\044\355\274\241\323\226\121\202\237
\302\310\274\336\043\232\307\120\053\232\266\170\122\252\316\225
\366\140\073\242\231\371\046\146\364\107\054\101\045\274\101\372
\326\213\177\275\137\202\174\323\105\205\264\114\330\354\263\027
\357\104\072\365\050\145\357\365\236\161\314\041\336\350\326\121
\034\020\373\100\374\111\345\134\204\027\257\252\031\136\242\355
\116\036\242\373\312\107\034\034\144\076\024\221\242\071\031\064
\210\177\221\313\073\235\031\160\352\050\373\374\120\017\314\275
\075\136\002\003\153\171\065\104\101\166\356\266\055\164\204\341
\202\161\323\045\260\323\303\231\104\253\077\342\014\245\356\275
\246\374\244\021\000\356\234\275\067\321\326\142\304\060\024\055
\020\012\227\212\210\365\045\074\226\276\106\100\032\212\300\205
\166\304\240\111\340\111\245\347\031\265\011\363\314\115\355\026
\136\232\324\323\310\151\320\330\212\067\205\153\116\344\252\007
\222\134\324\161\161\201\110\323\170\365\126\140\376\314\002\324
\000\223\037\114\222\100\227\276\162\123\171\056\046\122\276\246
\243\164\261\224\331\024\143\072\156\133\321\074\222\047\122\220
\062\132\222\322\017\116\133\013\006\072\142\345\326\047\014\001
\366\045\002\270\213\020\051\102\251\367\151\312\334\353\012\222
\113\050\061\206

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "E-ME SSI (RCA)"

Issuer: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu dala,C=LV

```
# Serial Number:2e:ef:db:fb:d8:89:3d:8f:49:1c:93:72:fe:45:df:ed
#
Subject: CN=E-ME SSI (RCA),OU=Sertifikācijas pakalpojumu daļa,C=LV
# Not Valid Before: Tue May 19 08:45:56 2009
# Not Valid After: Wed May 19 08:48:15 2027
# Fingerprint (MD5): cb:bd:c3:68:2d:b3:cb:18:59:d3:29:52:e8:c6:64:89
# Fingerprint (SHA1): c9:32:1d:e6:b5:a8:26:66:cf:69:71:a1:8a:56:f2:d3:a8:67:56:02
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "E-ME SSI (RCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\311\062\035\346\265\250\046\146\317\151\161\241\212\126\362\323
\250\147\126\002
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\313\275\303\150\055\263\313\030\131\323\051\122\350\306\144\211
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\013\060\011\006\003\125\004\006\023\002\114\126\061
\050\060\046\006\003\125\004\013\023\037\123\145\162\164\151\146
\151\153\141\143\151\152\141\163\040\160\141\153\141\154\160\157
\152\165\155\165\040\144\141\154\141\061\027\060\025\006\003\125
\004\003\023\016\105\055\115\105\040\123\123\111\040\050\122\103
\101\051
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\056\357\333\373\330\211\075\217\111\034\223\162\376\105
\337\355
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ACEDICOM Root"
# Issuer: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
# Serial Number:61:8d:c7:86:3b:01:82:05
# Subject: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root
# Not Valid Before: Fri Apr 18 16:24:22 2008
# Not Valid After: Thu Apr 13 16:24:22 2028
# Fingerprint (MD5): 42:81:a0:e2:1c:e3:55:10:de:55:89:42:65:96:22:e6
# Fingerprint (SHA1): e0:b4:32:2e:b2:f6:a5:68:b6:54:53:84:48:18:4a:50:36:87:43:84
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACEDICOM Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105
\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125
\004\006\023\002\105\123
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\026\060\024\006\003\125\004\003\014\015\101\103\105
\104\111\103\117\115\040\122\157\157\164\061\014\060\012\006\003
\125\004\013\014\003\120\113\111\061\017\060\015\006\003\125\004
\012\014\006\105\104\111\103\117\115\061\013\060\011\006\003\125
\004\006\023\002\105\123
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\141\215\307\206\073\001\202\005
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\265\060\202\003\235\240\003\002\001\002\002\010\141
\215\307\206\073\001\202\005\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\104\061\026\060\024\006\003\125\004
\003\014\015\101\103\105\104\111\103\117\115\040\122\157\157\164
\061\014\060\012\006\003\125\004\013\014\003\120\113\111\061\017
\060\015\006\003\125\004\012\014\006\105\104\111\103\117\115\061
\013\060\011\006\003\125\004\006\023\002\105\123\060\036\027\015
\060\070\060\064\061\070\061\066\062\064\062\062\132\027\015\062
\070\060\064\061\063\061\066\062\064\062\062\132\060\104\061\026
\060\024\006\003\125\004\003\014\015\101\103\105\104\111\103\117
\115\040\122\157\157\164\061\014\060\012\006\003\125\004\013\014
\003\120\113\111\061\017\060\015\006\003\125\004\012\014\006\105
\104\111\103\117\115\061\013\060\011\006\003\125\004\006\023\002
\105\123\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\377\222\225\341\150\006\166\264\054\310\130\110\312
\375\200\124\051\125\143\044\377\220\145\233\020\165\173\303\152
\333\142\002\001\362\030\206\265\174\132\070\261\344\130\271\373
\323\330\055\237\275\062\067\277\054\025\155\276\265\364\041\322
\023\221\331\007\255\001\005\326\363\275\167\316\137\102\201\012
\371\152\343\203\000\250\053\056\125\023\143\201\312\107\034\173
\134\026\127\172\033\203\140\004\072\076\145\303\315\001\336\336
\244\326\014\272\216\336\331\004\356\027\126\042\233\217\143\375
\115\026\013\267\173\167\214\371\045\265\321\155\231\022\056\117
```

\032\270\346\352\004\222\256\075\021\271\121\102\075\207\260\061
\205\257\171\132\234\376\347\116\136\222\117\103\374\253\072\255
\245\022\046\146\271\342\014\327\230\316\324\130\245\225\100\012
\267\104\235\023\164\053\302\245\353\042\025\230\020\330\213\305
\004\237\035\217\140\345\006\033\233\317\271\171\240\075\242\043
\077\102\077\153\372\034\003\173\060\215\316\154\300\277\346\033
\137\277\147\270\204\031\325\025\357\173\313\220\066\061\142\311
\274\002\253\106\137\233\376\032\150\224\064\075\220\216\255\366
\344\035\011\177\112\210\070\077\276\147\375\064\226\365\035\274
\060\164\313\070\356\325\154\253\324\374\364\000\267\000\133\205
\062\026\166\063\351\330\243\231\235\005\000\252\026\346\363\201
\175\157\175\252\206\155\255\025\164\323\304\242\161\252\364\024
\175\347\062\270\037\274\325\361\116\275\157\027\002\071\327\016
\225\102\072\307\000\076\351\046\143\021\352\013\321\112\377\030
\235\262\327\173\057\072\331\226\373\350\036\222\256\023\125\310
\331\047\366\334\110\033\260\044\301\205\343\167\235\232\244\363
\014\021\035\015\310\264\024\356\265\202\127\011\277\040\130\177
\057\042\043\330\160\313\171\154\311\113\362\251\052\310\374\207
\053\327\032\120\370\047\350\057\103\343\072\275\330\127\161\375
\316\246\122\133\371\335\115\355\345\366\157\211\355\273\223\234
\166\041\165\360\222\114\051\367\057\234\001\056\376\120\106\236
\144\014\024\263\007\133\305\302\163\154\361\007\134\105\044\024
\065\256\203\361\152\115\211\172\372\263\330\055\146\360\066\207
\365\053\123\002\003\001\000\001\243\201\252\060\201\247\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\037\006\003\125\035\043\004\030\060\026\200\024\246\263\341\053
\053\111\266\327\163\241\252\224\365\001\347\163\145\114\254\120
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206
\060\035\006\003\125\035\016\004\026\004\024\246\263\341\053\053
\111\266\327\163\241\252\224\365\001\347\163\145\114\254\120\060
\104\006\003\125\035\040\004\075\060\073\060\071\006\004\125\035
\040\000\060\061\060\057\006\010\053\006\001\005\005\007\002\001
\026\043\150\164\164\160\072\057\057\141\143\145\144\151\143\157
\155\056\145\144\151\143\157\155\147\162\157\165\160\056\143\157
\155\057\144\157\143\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\002\001\000\316\054\013\122\121\142\046
\175\014\047\203\217\305\366\332\240\150\173\117\222\136\352\244
\163\062\021\123\104\262\104\313\235\354\017\171\102\263\020\246
\307\015\235\313\266\372\077\072\174\352\277\210\123\033\074\367
\202\372\005\065\063\341\065\250\127\300\347\375\215\117\077\223
\062\117\170\146\003\167\007\130\351\225\310\176\076\320\171\000
\214\362\033\121\063\233\274\224\351\072\173\156\122\055\062\236
\043\244\105\373\266\056\023\260\213\030\261\335\316\325\035\247
\102\177\125\276\373\133\273\107\324\374\044\315\004\256\226\005
\025\326\254\316\060\363\312\013\305\272\342\042\340\246\255\042
\344\002\356\164\021\177\114\377\170\035\065\332\346\002\064\353
\030\022\141\167\006\011\026\143\352\030\255\242\207\037\362\307
\200\011\011\165\116\020\250\217\075\206\270\165\021\300\044\142

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\212\226\173\112\105\351\354\131\305\276\153\203\346\341\350\254
\265\060\036\376\005\007\200\371\341\043\015\120\217\005\230\377
\054\137\350\073\266\255\317\201\265\041\207\312\010\052\043\047
\060\040\053\317\355\224\133\254\262\172\322\307\050\241\212\013
\233\115\112\054\155\205\077\011\162\074\147\342\331\334\007\272
\353\145\173\132\001\143\326\220\133\117\027\146\075\177\013\031
\243\223\143\020\122\052\237\024\026\130\342\334\245\364\241\026
\213\016\221\213\201\312\233\131\372\330\153\221\007\145\125\137
\122\037\257\072\373\220\335\151\245\133\234\155\016\054\266\372
\316\254\245\174\062\112\147\100\334\060\064\043\335\327\004\043
\146\360\374\125\200\247\373\146\031\202\065\147\142\160\071\136
\157\307\352\220\100\104\010\036\270\262\326\333\356\131\247\015
\030\171\064\274\124\030\136\123\312\064\121\355\105\012\346\216
\307\202\066\076\247\070\143\251\060\054\027\020\140\222\237\125
\207\022\131\020\302\017\147\151\021\314\116\036\176\112\232\255
\257\100\250\165\254\126\220\164\270\240\234\245\171\157\334\351
\032\310\151\005\351\272\372\003\263\174\344\340\116\302\316\235
\350\266\106\015\156\176\127\072\147\224\302\313\037\234\167\112
\147\116\151\206\103\223\070\373\266\333\117\203\221\324\140\176
\113\076\053\070\007\125\230\136\244
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust

for "ACEDICOM Root"

Issuer: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root

Serial Number:61:8d:c7:86:3b:01:82:05

Subject: C=ES,O=EDICOM,OU=PKI,CN=ACEDICOM Root

Not Valid Before: Fri Apr 18 16:24:22 2008

Not Valid After: Thu Apr 13 16:24:22 2028

Fingerprint (MD5): 42:81:a0:e2:1c:e3:55:10:de:55:89:42:65:96:22:e6

Fingerprint (SHA1): e0:b4:32:2e:b2:f6:a5:68:b6:54:53:84:48:18:4a:50:36:87:43:84

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ACEDICOM Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\340\264\062\056\262\366\245\150\266\124\123\204\110\030\112\120
\066\207\103\204
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\102\201\240\342\034\343\125\020\336\125\211\102\145\226\042\346
```

END

CKA_ISSUER MULTILINE_OCTAL
\\060\\104\\061\\026\\060\\024\\006\\003\\125\\004\\003\\014\\015\\101\\103\\105
\\104\\111\\103\\117\\115\\040\\122\\157\\157\\164\\061\\014\\060\\012\\006\\003
\\125\\004\\013\\014\\003\\120\\113\\111\\061\\017\\060\\015\\006\\003\\125\\004
\\012\\014\\006\\105\\104\\111\\103\\117\\115\\061\\013\\060\\011\\006\\003\\125
\\004\\006\\023\\002\\105\\123

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\\002\\010\\141\\215\\307\\206\\073\\001\\202\\005

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Autoridad Certificadora Raiz de la Secretaria de Economia"

Issuer: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur
1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

Serial Number: 1 (0x1)

Subject: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de
Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes
Sur 1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

Not Valid Before: Sun May 08 00:00:00 2005

Not Valid After: Thu May 08 00:00:00 2025

Fingerprint (MD5): 07:61:92:04:7e:a6:b9:cd:5e:6b:00:7a:e3:bf:1d:04

Fingerprint (SHA1): 34:d4:99:42:6f:9f:c2:bb:27:b0:75:ba:b6:82:aa:e5:ef:fc:ba:74

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridad Certificadora Raiz de la Secretaria de Economia"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\\060\\202\\001\\061\\061\\027\\060\\025\\006\\003\\125\\004\\007\\023\\016\\101
\\154\\166\\141\\162\\157\\040\\117\\142\\162\\145\\147\\157\\156\\061\\031\\060
\\027\\006\\003\\125\\004\\010\\023\\020\\104\\151\\163\\164\\162\\151\\164\\157
\\040\\106\\145\\144\\145\\162\\141\\154\\061\\013\\060\\011\\006\\003\\125\\004
\\006\\023\\002\\115\\130\\061\\016\\060\\014\\006\\003\\125\\004\\021\\023\\005
\\060\\061\\060\\063\\060\\061\\035\\060\\033\\006\\003\\125\\004\\011\\023\\024
\\111\\156\\163\\165\\162\\147\\145\\156\\164\\145\\163\\040\\123\\165\\162\\040
\\061\\071\\064\\060\\061\\102\\060\\100\\006\\003\\125\\004\\003\\023\\071\\101
\\165\\164\\157\\162\\151\\144\\141\\144\\040\\103\\145\\162\\164\\151\\146\\151
\\143\\141\\144\\157\\162\\141\\040\\122\\141\\151\\172\\040\\144\\145\\040\\154
\\141\\040\\123\\145\\143\\162\\145\\164\\141\\162\\151\\141\\040\\144\\145\\040
\\105\\143\\157\\156\\157\\155\\151\\141\\061\\064\\060\\062\\006\\003\\125\\004

\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156
\145\162\141\154\040\144\145\040\116\157\162\155\141\164\151\166
\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037
\060\035\006\003\125\004\012\023\026\123\145\143\162\145\164\141
\162\151\141\040\144\145\040\105\143\157\156\157\155\151\141\061
\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026\025
\141\143\162\163\145\100\145\143\157\156\157\155\151\141\056\147
\157\142\056\155\170

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\202\001\061\061\027\060\025\006\003\125\004\007\023\016\101
\154\166\141\162\157\040\117\142\162\145\147\157\156\061\031\060
\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024
\111\156\163\165\162\147\145\156\164\145\163\040\123\165\162\040
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CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Autoridad Certificadora Raiz de la Secretaria de Economia"

Issuer: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur 1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

Serial Number: 1 (0x1)

Subject: 1.2.840.113549.1.9.1=acrse@economia.gob.mx,O=Secretaria de Economia,OU=Direccion General de Normatividad Mercantil,CN=Autoridad Certificadora Raiz de la Secretaria de Economia,STREET=Insurgentes Sur 1940,2.5.4.17=01030,C=MX,ST=Distrito Federal,L=Alvaro Obregon

Not Valid Before: Sun May 08 00:00:00 2005

```
# Not Valid After: Thu May 08 00:00:00 2025
# Fingerprint
(MD5): 07:61:92:04:7e:a6:b9:cd:5e:6b:00:7a:e3:bf:1d:04
# Fingerprint (SHA1): 34:d4:99:42:6f:9f:c2:bb:27:b0:75:ba:b6:82:aa:e5:ef:fc:ba:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad Certificadora Raiz de la Secretaria de Economia"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\064\324\231\102\157\237\302\273\047\260\165\272\266\202\252\345
\357\374\272\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\007\141\222\004\176\246\271\315\136\153\000\172\343\277\035\004
END
CKA_ISSUER MULTILINE_OCTAL
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\027\006\003\125\004\010\023\020\104\151\163\164\162\151\164\157
\040\106\145\144\145\162\141\154\061\013\060\011\006\003\125\004
\006\023\002\115\130\061\016\060\014\006\003\125\004\021\023\005
\060\061\060\063\060\061\035\060\033\006\003\125\004\011\023\024
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\105\143\157\156\157\155\151\141\061\064\060\062\006\003\125\004
\013\023\053\104\151\162\145\143\143\151\157\156\040\107\145\156
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\151\144\141\144\040\115\145\162\143\141\156\164\151\154\061\037
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CKA_SERIAL_NUMBER
MULTILINE_OCTAL
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END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Correo Uruguayo - Root CA"
# Issuer: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION
NACIONAL DE CORREOS,C=UY
# Serial Number:ca:22:79:08:23:2a:f0:f5:82:b8:85:d3:63:dd:f1
# Subject: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION
NACIONAL DE CORREOS,C=UY
# Not Valid Before: Mon Jul 14 16:52:15 2008
# Not Valid After: Tue Dec 31 02:59:59 2030
# Fingerprint (MD5): 24:6d:ab:d2:f2:ea:4a:66:ae:5b:bc:ae:50:ad:6e:56
# Fingerprint (SHA1): f9:dd:19:26:6b:20:43:f1:fe:4b:3d:cb:01:90:af:f1:1f:31:a6:9d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Correo Uruguayo - Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
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\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
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MULTILINE_OCTAL
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CKA_VALUE MULTILINE_OCTAL
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\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006
\003\125\035\016\004\026\004\024\175\273\151\353\210\141\341\100
\317\107\043\144\000\206\242\146\153\334\204\225\060\114\006\003
\125\035\040\004\105\060\103\060\101\006\004\125\035\040\000\060
\071\060\067\006\010\053\006\001\005\005\007\002\001\026\053\150
\164\164\160\072\057\057\167\167\167\056\143\157\162\162\145\157
\056\143\157\155\056\165\171\057\143\157\162\162\145\157\143\145
\162\164\057\143\160\163\056\160\144\146\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\126\337
\023\211\276\142\267\016\201\041\163\244\324\067\312\355\267\057
\225\164\327\211\370\113\107\201\356\147\355\270\051\337\041\240
\374\124\147\147\310\127\054\133\241\012\165\170\041\041\312\240
\250\337\153\234\331\066\002\215\270\001\301\157\216\173\154\311
\244\262\305\106\251\312\114\002\201\372\243\173\235\075\110\346
\312\100\146\322\104\235\166\340\125\271\246\234\247\321\103\330
\365\240\264\235\370\367\345\246\246\102\363\002\062\131\106\162
\053\024\354\136\145\325\121\201\170\316\252\057\215\226\211\171
\152\373\017\310\133\317\264\256\220\266\137\343\174\142\154\267
\246\377\220\201\265\230\221\163\022\060\257\307\350\201\002\150
\163\051\273\130\165\075\267\326\103\325\256\115\362\102\271\360
\337\332\061\000\023\332\341\263\266\006\213\133\375\311\230\270
\242\023\321\272\217\301\212\032\236\017\377\202\276\004\202\345
\053\223\076\036\265\242\014\033\306\032\260\163\211\166\203\274
\216\073\273\027\155\024\303\213\276\175\025\046\265\251\234\027
\172\120\172\055\353\351\231\224\256\230\020\275\356\052\135\135
\326\216\064\133\254\036\207\140\153\230\307\207\217\323\234\262
\150\005\111\007\371\251\061\146\234\376\277\247\131\350\054\360
\066\324\362\250\031\202\300\236\247\071\371\261\230\064\243\037
\372\315\311\031\055\170\336\267\375\142\360\223\243\376\000\133
\326\012\344\363\176\174\227\050\341\005\354\005\064\105\023\377
\051\023\141\212\047\117\333\270\322\222\041\047\265\210\167\147
\250\176\317\044\074\207\010\004\063\163\217\013\266\206\370\317
\357\262\246\044\036\013\221\221\000\120\026\062\022\330\011\045
\332\143\116\335\333\055\327\347\004\153\343\143\037\251\376\251
\001\143\304\312\114\024\150\203\274\005\254\131\026\373\156\241
\007\157\273\113\276\155\230\110\166\045\173\112\021\226\124\010
\254\251\363\067\253\203\303\321\315\201\230\300\345\100\065\270
\237\221\347\157\346\113\040\026\212\123\173\254\072\321\230\065
\124\320\324\277\256\176\232\113\036\351\165\243\045\260\073\347
\145\277\117\225\364\035\275\304\272\311\115\201\121\302\077\132

```
\331\022\364\041\033\326\225\352\075\220\376\251\223\342
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Correo Uruguayo - Root CA"
# Issuer: CN=Correo Uruguayo - Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION
NACIONAL DE CORREOS,C=UY
# Serial Number:ca:22:79:08:23:2a:f0:f5:82:b8:85:d3:63:dd:f1
# Subject: CN=Correo Uruguayo
- Root CA,OU=SERVICIOS ELECTRONICOS,O=ADMINISTRACION NACIONAL DE CORREOS,C=UY
# Not Valid Before: Mon Jul 14 16:52:15 2008
# Not Valid After: Tue Dec 31 02:59:59 2030
# Fingerprint (MD5): 24:6d:ab:d2:f2:ea:4a:66:ae:5b:bc:ae:50:ad:6e:56
# Fingerprint (SHA1): f9:dd:19:26:6b:20:43:f1:fe:4b:3d:cb:01:90:af:f1:1f:31:a6:9d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Correo Uruguayo - Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\371\335\031\046\153\040\103\361\376\113\075\313\001\220\257\361
\037\061\246\235
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\044\155\253\322\362\352\112\146\256\133\274\256\120\255\156\126
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\131\061
\053\060\051\006\003\125\004\012\014\042\101\104\115\111\116\111
\123\124\122\101\103\111\117\116\040\116\101\103\111\117\116\101
\114\040\104\105\040\103\117\122\122\105\117\123\061\037\060\035
\006\003\125\004\013\014\026\123\105\122\126\111\103\111\117\123
\040\105\114\105\103\124\122\117\116\111\103\117\123\061\042\060
\040\006\003\125\004\003\014\031\103\157\162\162\145\157\040\125
\162\165\147\165\141\171\157\040\055\040\122\157\157\164\040\103
\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\000\312\042\171\010\043\052\360\365\202\270\205\323\143
\335\361
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
```

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "CNNIC ROOT"
Issuer: CN=CNNIC ROOT,O=CNNIC,C=CN
Serial Number:49:33:00:01
Subject: CN=CNNIC ROOT,O=CNNIC,C=CN
Not Valid Before: Mon Apr 16 07:09:14 2007
Not Valid After: Fri Apr 16 07:09:14 2027
Fingerprint (MD5): 21:bc:82:ab:49:c4:13:3b:4b:b2:2b:5c:6b:90:9c:19
Fingerprint (SHA1): 8b:af:4c:9b:1d:f0:2a:92:f7:da:12:8e:b9:1b:ac:f4:98:60:4b:6f

CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CNNIC ROOT"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124

END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124

END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\111\063\000\001
END

CKA_VALUE MULTILINE_OCTAL
\060\202\003\125\060\202\002\075\240\003\002\001\002\002\004\111
\063\000\001\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\062\061\013\060\011\006\003\125\004\006\023\002\103
\116\061\016\060\014\006\003\125\004\012\023\005\103\116\116\111
\103\061\023\060\021\006\003\125\004\003\023\012\103\116\116\111
\103\040\122\117\117\124\060\036\027\015\060\067\060\064\061\066
\060\067\060\071\061\064\132\027\015\062\067\060\064\061\066\060
\067\060\071\061\064\132\060\062\061\013\060\011\006\003\125\004
\006\023\002\103\116\061\016\060\014\006\003\125\004\012\023\005
\103\116\116\111\103\061\023\060\021\006\003\125\004\003\023\012
\103\116\116\111\103\040\122\117\117\124\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001

\017\000\060\202\001\012\002\202\001\001\000\323\065\367\077\163
\167\255\350\133\163\027\302\321\157\355\125\274\156\352\350\244
\171\262\154\303\243\357\341\237\261\073\110\205\365\232\134\041
\042\020\054\305\202\316\332\343\232\156\067\341\207\054\334\271
\014\132\272\210\125\337\375\252\333\037\061\352\001\361\337\071
\001\301\023\375\110\122\041\304\125\337\332\330\263\124\166\272
\164\261\267\175\327\300\350\366\131\305\115\310\275\255\037\024
\332\337\130\104\045\062\031\052\307\176\176\216\256\070\260\060
\173\107\162\011\061\360\060\333\303\033\166\051\273\151\166\116
\127\371\033\144\242\223\126\267\157\231\156\333\012\004\234\021
\343\200\037\313\143\224\020\012\251\341\144\202\061\371\214\047
\355\246\231\000\366\160\223\030\370\241\064\206\243\335\172\302
\030\171\366\172\145\065\317\220\353\275\063\223\237\123\253\163
\073\346\233\064\040\057\035\357\251\035\143\032\240\200\333\003
\057\371\046\032\206\322\215\273\251\276\122\072\207\147\110\015
\277\264\240\330\046\276\043\137\163\067\177\046\346\222\004\243
\177\317\040\247\267\363\072\312\313\231\313\002\003\001\000\001
\243\163\060\161\060\021\006\011\140\206\110\001\206\370\102\001
\001\004\004\003\002\000\007\060\037\006\003\125\035\043\004\030
\060\026\200\024\145\362\061\255\052\367\367\335\122\226\012\307
\002\301\016\357\246\325\073\021\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\013\006\003\125\035\017
\004\004\003\002\001\376\060\035\006\003\125\035\016\004\026\004
\024\145\362\061\255\052\367\367\335\122\226\012\307\002\301\016
\357\246\325\073\021\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\113\065\356\314\344\256\277
\303\156\255\237\225\073\113\077\133\036\337\127\051\242\131\312
\070\342\271\032\377\236\346\156\062\335\036\256\352\065\267\365
\223\221\116\332\102\341\303\027\140\120\362\321\134\046\271\202
\267\352\155\344\234\204\347\003\171\027\257\230\075\224\333\307
\272\000\347\270\277\001\127\301\167\105\062\014\073\361\264\034
\010\260\375\121\240\241\335\232\035\023\066\232\155\267\307\074
\271\341\305\331\027\372\203\325\075\025\240\074\273\036\013\342
\310\220\077\250\206\014\374\371\213\136\205\313\117\133\113\142
\021\107\305\105\174\005\057\101\261\236\020\151\033\231\226\340
\125\171\373\116\206\231\270\224\332\206\070\152\223\243\347\313
\156\345\337\352\041\125\211\234\175\175\177\230\365\000\211\356
\343\204\300\134\226\265\305\106\352\106\340\205\125\266\033\311
\022\326\301\315\315\200\363\002\001\074\310\151\313\105\110\143
\330\224\320\354\205\016\073\116\021\145\364\202\214\246\075\256
\056\042\224\011\310\134\352\074\201\135\026\052\003\227\026\125
\011\333\212\101\202\236\146\233\021

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "CNNIC ROOT"
# Issuer: CN=CNNIC ROOT,O=CNNIC,C=CN
# Serial Number:49:33:00:01
# Subject: CN=CNNIC ROOT,O=CNNIC,C=CN
# Not Valid Before: Mon Apr 16 07:09:14 2007
# Not Valid After: Fri Apr 16 07:09:14 2027
# Fingerprint (MD5): 21:bc:82:ab:49:c4:13:3b:4b:b2:2b:5c:6b:90:9c:19
# Fingerprint (SHA1): 8b:af:4c:9b:1d:f0:2a:92:f7:da:12:8e:b9:1b:ac:f4:98:60:4b:6f
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "CNNIC ROOT"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\213\257\114\233\035\360\052\222\367\332\022\216\271\033\254\364
\230\140\113\157
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\041\274\202\253\111\304\023\073\113\262\053\134\153\220\234\031
END
CKA_ISSUER MULTILINE_OCTAL
\060\062\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\016\060\014\006\003\125\004\012\023\005\103\116\116\111\103\061
\023\060\021\006\003\125\004\003\023\012\103\116\116\111\103\040
\122\117\117\124
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\111\063\000\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Common Policy"
# Issuer: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us
# Serial Number:29:36:47:aa:e3:8a:ac:86:4a:23:56:f2:ca:b7:61:af
# Subject: CN=Common Policy,OU=FBCA,O=U.S.
Government,C=us
# Not Valid Before: Mon Oct 15 15:58:00 2007
# Not Valid After: Fri Oct 15 16:08:00 2027
# Fingerprint (MD5): f0:58:c5:03:82:67:17:ab:8f:da:03:10:27:8e:19:c2
# Fingerprint (SHA1): cb:44:a0:97:85:7c:45:fa:18:7e:d9:52:08:6c:b9:84:1f:2d:51:b5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Common Policy"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\051\066\107\252\343\212\254\206\112\043\126\362\312\267
\141\257
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\241\060\202\002\211\240\003\002\001\002\002\020\051
\066\107\252\343\212\254\206\112\043\126\362\312\267\141\257\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\116
\061\013\060\011\006\003\125\004\006\023\002\165\163\061\030\060
\026\006\003\125\004\012\023\017\125\056\123\056\040\107\157\166
\145\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013
\023\004\106\102\103\101\061\026\060\024\006\003\125\004\003\023
\015\103\157\155\155\157\156\040\120\157\154\151\143\171\060\036
\027\015\060\067\061\060\061\065\061\065\065\070\060\060\132\027
\015\062\067\061\060\061\065\061\066\060\070\060\060\132\060\116
\061\013\060\011\006\003\125\004\006\023\002\165\163\061\030\060
\026\006\003\125\004\012\023\017\125\056\123\056\040\107\157\166
\145\162\156\155\145\156\164\061\015\060\013\006\003\125\004\013
\023\004\106\102\103\101\061\026\060\024\006\003\125\004\003\023
\015\103\157\155\155\157\156\040\120\157\154\151\143\171\060\202
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\227
\215\275\063\047\344\255\133\373\170\275\057\107\107\156\307\170
\351\223\234\244\336\311\034\375\057\033\071\070\254\107\027\300
\176\167\051\000\073\003\037\150\017\315\115\245\356\167\270\054
\142\153\061\366\372\162\011\175\060\051\006\174\347\174\243\075
\204\030\212\035\256\054\222\250\037\350\136\117\215\216\353\077
\032\370\234\012\147\235\260\147\115\360\056\320\060\336\303\224
```

\260\240\317\056\012\064\177\124\011\323\066\275\244\111\127\122
\163\351\235\376\344\110\171\106\033\133\215\062\344\245\110\144
\363\042\015\222\235\010\025\277\140\074\203\367\107\042\045\042
\255\051\161\267\167\357\027\311\242\266\224\136\310\060\220\244
\024\110\134\126\127\013\101\114\005\324\052\114\077\256\022\233
\131\021\165\160\007\042\151\055\054\323\061\314\222\176\314\315
\244\176\224\107\252\234\011\010\366\113\257\122\350\152\100\221
\305\125\275\100\261\310\155\127\206\225\027\346\037\163\276\107
\056\076\213\114\027\271\271\045\034\245\122\027\066\010\131\300
\102\276\012\053\264\126\121\074\033\125\311\214\220\167\353\002
\003\001\000\001\243\173\060\171\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\057\130\227\330\251\005\230\245\126\037\373\331
\253\165\357\002\074\066\064\307\060\022\006\011\053\006\001\004
\001\202\067\025\001\004\005\002\003\001\000\001\060\043\006\011
\053\006\001\004\001\202\067\025\002\004\026\004\024\166\267\140
\226\335\024\126\051\254\165\205\323\160\143\301\274\107\206\034
\213\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\140\256\363\110\026\100\162\246\010\210\311
\274\107\054\044\113\135\240\221\163\355\145\170\220\360\147\220
\172\245\277\012\255\266\052\371\231\147\337\203\305\167\037\064
\011\070\371\176\236\101\340\110\140\376\342\252\135\207\210\352
\210\375\134\105\262\311\152\332\175\244\255\261\117\277\034\015
\237\036\232\300\325\024\163\070\053\212\170\100\156\060\367\142
\341\315\231\374\121\151\147\154\021\335\270\020\243\150\336\046
\245\126\375\066\154\067\230\154\373\356\174\074\154\153\160\077
\367\110\067\011\217\013\102\201\255\106\106\270\013\203\006\364
\033\070\240\177\117\315\013\357\203\211\207\227\034\212\060\147
\334\375\124\241\003\176\001\313\205\114\261\013\051\303\276\354
\174\341\077\017\011\122\074\057\247\232\110\376\067\351\021\006
\130\341\066\101\212\304\266\277\216\335\316\112\263\274\032\300
\315\372\032\231\322\161\233\372\317\274\362\304\124\243\210\065
\166\314\033\054\106\157\014\264\321\303\141\166\222\164\021\352
\113\200\215\034\211\021\213\354\133\377\027\311\110\374\347\340
\006\021\342\204\136

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Common Policy"

Issuer: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us

Serial Number:29:36:47:aa:e3:8a:ac:86:4a:23:56:f2:ca:b7:61:af

Subject: CN=Common Policy,OU=FBCA,O=U.S. Government,C=us

Not Valid Before: Mon Oct 15 15:58:00 2007

```
# Not Valid After: Fri Oct 15 16:08:00 2027
# Fingerprint (MD5): f0:58:c5:03:82:67:17:ab:8f:da:03:10:27:8e:19:c2
# Fingerprint (SHA1): cb:44:a0:97:85:7c:45:fa:18:7e:d9:52:08:6c:b9:84:1f:2d:51:b5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Common Policy"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\313\104\240\227\205\174\105\372\030\176\331\122\010\154\271\204
\037\055\121\265
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\360\130\305\003\202\147\027\253\217\332\003\020\047\216\031\302
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\165\163\061
\030\060\026\006\003\125\004\012\023\017\125\056\123\056\040\107
\157\166\145\162\156\155\145\156\164\061\015\060\013\006\003\125
\004\013\023\004\106\102\103\101\061\026\060\024\006\003\125\004
\003\023\015\103\157\155\155\157\156\040\120\157\154\151\143\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\051\066\107\252\343\212\254\206\112\043\126\362\312\267
\141\257
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Staat der Nederlanden Root CA - G2"
# Issuer: CN=Staat der Nederlanden Root CA - G2,O=Staat
  der Nederlanden,C=NL
# Serial Number:98:96:8c
# Subject: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL
# Not Valid Before: Wed Mar 26 11:18:17 2008
# Not Valid After: Wed Mar 25 11:03:10 2020
# Fingerprint (MD5): 7c:a5:0f:f8:5b:9a:7d:6d:30:ae:54:5a:e3:42:a2:8a
# Fingerprint (SHA1): 59:af:82:79:91:86:c7:b4:75:07:cb:cf:03:57:46:eb:04:dd:b7:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

CKA_SUBJECT MULTILINE_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\062

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\004\000\230\226\214

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\312\060\202\003\262\240\003\002\001\002\002\004\000
\230\226\214\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\116
\114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\061\053\060\051\006\003\125\004\003\014\042\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\040\122\157\157\164\040\103\101\040\055\040\107\062\060\036
\027\015\060\070\060\063\062\066\061\061\061\070\061\067\132\027
\015\062\060\060\063\062\065\061\061\060\063\061\060\132\060\132
\061\013\060\011\006\003\125\004\006\023\002\116\114\061\036\060
\034\006\003\125\004\012\014\025\123\164\141\141\164\040\144\145
\162\040\116\145\144\145\162\154\141\156\144\145\156\061\053\060
\051\006\003\125\004\003\014\042\123\164\141\141\164\040\144\145
\162\040\116\145\144\145\162\154\141\156\144\145\156\040\122\157
\157\164\040\103\101\040\055\040\107\062\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\305\131\347\157\165
\252\076\113\234\265\270\254\236\013\344\371\331\312\253\135\217
\265\071\020\202\327\257\121\340\073\341\000\110\152\317\332\341
\006\103\021\231\252\024\045\022\255\042\350\000\155\103\304\251
\270\345\037\211\113\147\275\141\110\357\375\322\340\140\210\345
\271\030\140\050\303\167\053\255\260\067\252\067\336\144\131\052
\106\127\344\113\271\370\067\174\325\066\347\200\301\266\363\324
\147\233\226\350\316\327\306\012\123\320\153\111\226\363\243\013
\005\167\110\367\045\345\160\254\060\024\040\045\343\177\165\132

\345\110\370\116\173\003\007\004\372\202\141\207\156\360\073\304
\244\307\320\365\164\076\245\135\032\010\362\233\045\322\366\254
\004\046\076\125\072\142\050\245\173\262\060\257\370\067\302\321
\272\326\070\375\364\357\111\060\067\231\046\041\110\205\001\251
\345\026\347\334\220\125\337\017\350\070\315\231\067\041\117\135
\365\042\157\152\305\022\026\140\027\125\362\145\146\246\247\060
\221\070\301\070\035\206\004\204\272\032\045\170\136\235\257\314
\120\140\326\023\207\122\355\143\037\155\145\175\302\025\030\164
\312\341\176\144\051\214\162\330\026\023\175\013\111\112\361\050
\033\040\164\153\305\075\335\260\252\110\011\075\056\202\224\315
\032\145\331\053\210\232\231\274\030\176\237\356\175\146\174\076
\275\224\270\201\316\315\230\060\170\301\157\147\320\276\137\340
\150\355\336\342\261\311\054\131\170\222\252\337\053\140\143\362
\345\136\271\343\312\372\177\120\206\076\242\064\030\014\011\150
\050\021\034\344\341\271\134\076\107\272\062\077\030\314\133\204
\365\363\153\164\304\162\164\341\343\213\240\112\275\215\146\057
\352\255\065\332\040\323\210\202\141\360\022\042\266\274\320\325
\244\354\257\124\210\045\044\074\247\155\261\162\051\077\076\127
\246\177\125\257\156\046\306\376\347\314\100\134\121\104\201\012
\170\336\112\316\125\277\035\325\331\267\126\357\360\166\377\013
\171\265\257\275\373\251\151\221\106\227\150\200\024\066\035\263
\177\273\051\230\066\245\040\372\202\140\142\063\244\354\326\272
\007\247\156\305\317\024\246\347\326\222\064\330\201\365\374\035
\135\252\134\036\366\243\115\073\270\367\071\002\003\001\000\001
\243\201\227\060\201\224\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\122\006\003\125\035\040\004\113
\060\111\060\107\006\004\125\035\040\000\060\077\060\075\006\010
\053\006\001\005\005\007\002\001\026\061\150\164\164\160\072\057
\057\167\167\167\056\160\153\151\157\166\145\162\150\145\151\144
\056\156\154\057\160\157\154\151\143\151\145\163\057\162\157\157
\164\055\160\157\154\151\143\171\055\107\062\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125
\035\016\004\026\004\024\221\150\062\207\025\035\211\342\265\361
\254\066\050\064\215\013\174\142\210\353\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\002\001\000\250\101
\112\147\052\222\201\202\120\156\341\327\330\263\071\073\363\002
\025\011\120\121\357\055\275\044\173\210\206\073\371\264\274\222
\011\226\271\366\300\253\043\140\006\171\214\021\116\121\322\171
\200\063\373\235\110\276\354\101\103\201\037\176\107\100\034\345
\172\010\312\252\213\165\255\024\304\302\350\146\074\202\007\247
\346\047\202\133\030\346\017\156\331\120\076\212\102\030\051\306
\264\126\374\126\020\240\005\027\275\014\043\177\364\223\355\234
\032\121\276\335\105\101\277\221\044\264\037\214\351\137\317\173
\041\231\237\225\237\071\072\106\034\154\371\315\173\234\220\315
\050\251\307\251\125\273\254\142\064\142\065\023\113\024\072\125
\203\271\206\215\222\246\306\364\007\045\124\314\026\127\022\112
\202\170\310\024\331\027\202\046\055\135\040\037\171\256\376\324
\160\026\026\225\203\330\065\071\377\122\135\165\034\026\305\023

```
\125\317\107\314\165\145\122\112\336\360\260\247\344\012\226\013
\373\255\302\342\045\204\262\335\344\275\176\131\154\233\360\360
\330\347\312\362\351\227\070\176\211\276\314\373\071\027\141\077
\162\333\072\221\330\145\001\031\035\255\120\244\127\012\174\113
\274\234\161\163\052\105\121\031\205\314\216\375\107\247\164\225
\035\250\321\257\116\027\261\151\046\302\252\170\127\133\305\115
\247\345\236\005\027\224\312\262\137\240\111\030\215\064\351\046
\154\110\036\252\150\222\005\341\202\163\132\233\334\007\133\010
\155\175\235\327\215\041\331\374\024\040\252\302\105\337\077\347
\000\262\121\344\302\370\005\271\171\032\214\064\363\236\133\344
\067\133\153\112\337\054\127\212\100\132\066\272\335\165\104\010
\067\102\160\014\376\334\136\041\240\243\212\300\220\234\150\332
\120\346\105\020\107\170\266\116\322\145\311\303\067\337\341\102
\143\260\127\067\105\055\173\212\234\277\005\352\145\125\063\367
\071\020\305\050\052\041\172\033\212\304\044\371\077\025\310\232
\025\040\365\125\142\226\355\155\223\120\274\344\252\170\255\331
\313\012\145\207\246\146\301\304\201\243\167\072\130\036\013\356
\203\213\235\036\322\122\244\314\035\157\260\230\155\224\061\265
\370\161\012\334\271\374\175\062\140\346\353\257\212\001
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Staat der Nederlanden Root CA - G2"

Issuer: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL

Serial Number:98:96:8c

Subject: CN=Staat der Nederlanden Root CA - G2,O=Staat der Nederlanden,C=NL

Not Valid Before: Wed Mar 26 11:18:17

2008

Not Valid After: Wed Mar 25 11:03:10 2020

Fingerprint (MD5): 7c:a5:0f:f8:5b:9a:7d:6d:30:ae:54:5a:e3:42:a2:8a

Fingerprint (SHA1): 59:af:82:79:91:86:c7:b4:75:07:cb:cf:03:57:46:eb:04:dd:b7:16

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Staat der Nederlanden Root CA - G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\131\257\202\171\221\206\307\264\165\007\313\317\003\127\106\353
\004\335\267\026
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\174\245\017\370\133\232\175\155\060\256\124\132\343\102\242\212
```

END

CKA_ISSUER MULTILINE_OCTAL


```
\060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\053\060\051\006\003\125\004\003\014\042\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101\040\055\040\107\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\004\000\230\226\214
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "NetLock Platina (Class Platinum) Ftanúsítvány"

Issuer: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

Serial Number:49:41:2d:ec:00:10

Subject: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

Not Valid Before: Thu Dec 11 15:12:44 2008

Not Valid After: Wed Dec 06 15:12:44 2028

Fingerprint (MD5): d5:97:88:da:64:16:e7:1d:66:4a:a6:ea:37:fc:7a:dc

Fingerprint (SHA1): ec:93:de:08:3c:93:d9:33:a9:86:b3:d5:cd:e2:5a:cb:2f:ee:cf:8e

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN

CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "NetLock Platina (Class Platinum) Ftanúsítvány"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\255\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\073\060\071\006\003\125\004\003\014\062\116\145
\164\114\157\143\153\040\120\154\141\164\151\156\141\040\050\103
\154\141\163\163\040\120\154\141\164\151\156\165\155\051\040\106
\305\221\164\141\156\303\272\163\303\255\164\166\303\241\156\171
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\255\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\051\061\073\060\071\006\003\125\004\003\014\062\116\145
\164\114\157\143\153\040\120\154\141\164\151\156\141\040\050\103
\154\141\163\163\040\120\154\141\164\151\156\165\155\051\040\106
\305\221\164\141\156\303\272\163\303\255\164\166\303\241\156\171
END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\006\111\101\055\354\000\020
END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\041\060\202\004\011\240\003\002\001\002\002\006\111
\101\055\354\000\020\060\015\006\011\052\206\110\206\367\015\001
\001\013\005\000\060\201\255\061\013\060\011\006\003\125\004\006
\023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102
\165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012
\014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067
\060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303
\255\164\166\303\241\156\171\153\151\141\144\303\263\153\040\050
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\051\061\073\060\071\006\003\125\004\003
\014\062\116\145\164\114\157\143\153\040\120\154\141\164\151\156
\141\040\050\103\154\141\163\163\040\120\154\141\164\151\156\165
\155\051\040\106\305\221\164\141\156\303\272\163\303\255\164\166
\303\241\156\171\060\036\027\015\060\070\061\062\061\061\061\065
\061\062\064\064\132\027\015\062\070\061\062\060\066\061\065\061
\062\064\064\132\060\201\255\061\013\060\011\006\003\125\004\006
\023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102
\165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012
\014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067
\060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "NetLock Platina (Class Platinum) Ftanúsítvány"

Issuer: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

Serial Number:49:41:2d:ec:00:10

Subject: CN=NetLock Platina (Class Platinum) Ftanúsítvány,OU=Tanúsítványkiadók (Certification Services),O=NetLock Kft.,L=Budapest,C=HU

Not Valid Before: Thu Dec 11 15:12:44 2008

Not Valid After: Wed Dec 06 15:12:44 2028

Fingerprint (MD5): d5:97:88:da:64:16:e7:1d:66:4a:a6:ea:37:fc:7a:dc

Fingerprint (SHA1): ec:93:de:08:3c:93:d9:33:a9:86:b3:d5:cd:e2:5a:cb:2f:ee:cf:8e

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "NetLock Platina (Class Platinum) Ftanúsítvány"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\057\356\317\216
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END

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\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
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END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
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END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
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```
# Microsoft Code Signing Only Certificate
# Certificate "AC Raíz Certicámara S.A."
# Issuer: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO
# Serial Number:07:7e:52:93:7b:e0:15:e3:57:f0:69:8c:cb:ec:0c
# Subject: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO
# Not Valid Before: Mon Nov 27 20:46:29 2006
# Not Valid After: Tue Apr 02 21:42:02 2030
# Fingerprint (MD5): 93:2a:3e:f6:fd:23:69:0d:71:20:d4:2b:47:99:2b:a6
# Fingerprint (SHA1): cb:a1:c5:f8:b0:e3:5e:b8:b9:45:12:d3:f9:34:a2:e9:06:10:d3:36
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CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC Raíz Certicámara S.A."
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061
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\116\113\063\107\166\227\152\313\176\137\375\025\246\236\102\103
\133\146\132\212\210\015\367\026\271\077\121\145\053\146\152\213
\321\070\122\242\326\106\021\372\374\232\034\164\236\217\227\013
\002\117\144\306\365\150\323\113\055\377\244\067\036\213\077\277
\104\276\141\106\241\204\075\010\047\114\201\040\167\211\010\352
\147\100\136\154\010\121\137\064\132\214\226\150\315\327\367\211
\302\034\323\062\000\257\122\313\323\140\133\052\072\107\176\153
\060\063\241\142\051\177\112\271\341\055\347\024\043\016\016\030
\107\341\171\374\025\125\320\261\374\045\161\143\165\063\034\043
\053\257\134\331\355\107\167\140\016\073\017\036\322\300\334\144
\005\211\374\170\326\134\054\046\103\251

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "AC Raíz Certicámara S.A."

Issuer: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

Serial Number:07:7e:52:93:7b:e0:15:e3:57:f0:69:8c:cb:ec:0c

Subject: CN=AC Raíz Certicámara S.A.,O=Sociedad Cameral de Certificación Digital - Certicámara S.A.,C=CO

Not Valid Before: Mon Nov 27 20:46:29 2006

Not Valid After: Tue Apr 02 21:42:02 2030

Fingerprint (MD5): 93:2a:3e:f6:fd:23:69:0d:71:20:d4:2b:47:99:2b:a6

Fingerprint (SHA1): cb:a1:c5:f8:b0:e3:5e:b8:b9:45:12:d3:f9:34:a2:e9:06:10:d3:36

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL

CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AC Raíz Certicámara S.A."


```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\313\241\305\370\260\343\136\270\271\105\022\323\371\064\242\351
\006\020\323\066
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\223\052\076\366\375\043\151\015\161\040\324\053\107\231\053\246
END
CKA_ISSUER MULTILINE_OCTAL
\060\173\061\013\060\011\006\003\125\004\006\023\002\103\117\061
\107\060\105\006\003\125\004\012\014\076\123\157\143\151\145\144
\141\144\040\103\141\155\145\162\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\303\263\156\040\104\151\147
\151\164\141\154\040\055\040\103\145\162\164\151\143\303\241\155
\141\162\141\040\123\056\101\056\061\043\060\041\006\003\125\004
\003\014\032\101\103\040\122\141\303\255\172\040\103\145\162\164
\151\143\303\241\155\141\162\141\040\123\056\101\056
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\007\176\122\223\173\340\025\343\127\360\151\214\313\354
\014
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Cisco Root CA 2048"
# Issuer: CN=Cisco Root CA 2048,O=Cisco Systems
# Serial Number:5f:f8:7b:28:2b:54:dc:8d:42:a3:15:b5:68:c9:ad:ff
# Subject: CN=Cisco Root CA 2048,O=Cisco Systems
# Not Valid Before: Fri May 14 20:17:12 2004
# Not Valid After: Mon May 14 20:25:42 2029
# Fingerprint (MD5): be:39:5a:be:07:8a:b1:12:17:25:cc:1d:46:34:3c:b2
# Fingerprint (SHA1): de:99:0c:ed:99:e0:43:1f:60:ed:c3:93:7e:7c:d5:bf:0e:d9:e5:fa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Cisco Root CA 2048"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040
\103\101\040\062\060\064\070
END

```

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040
\103\101\040\062\060\064\070

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\137\370\173\050\053\124\334\215\102\243\025\265\150\311
\255\377

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\103\060\202\002\053\240\003\002\001\002\002\020\137
\370\173\050\053\124\334\215\102\243\025\265\150\311\255\377\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\065
\061\026\060\024\006\003\125\004\012\023\015\103\151\163\143\157
\040\123\171\163\164\145\155\163\061\033\060\031\006\003\125\004
\003\023\022\103\151\163\143\157\040\122\157\157\164\040\103\101
\040\062\060\064\070\060\036\027\015\060\064\060\065\061\064\062
\060\061\067\061\062\132\027\015\062\071\060\065\061\064\062\060
\062\065\064\062\132\060\065\061\026\060\024\006\003\125\004\012
\023\015\103\151\163\143\157\040\123\171\163\164\145\155\163\061
\033\060\031\006\003\125\004\003\023\022\103\151\163\143\157\040
\122\157\157\164\040\103\101\040\062\060\064\070\060\202\001\040
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\015\000\060\202\001\010\002\202\001\001\000\260\232\271
\253\247\257\012\167\247\342\161\266\264\146\142\224\170\210\107
\306\142\125\204\100\062\277\300\253\056\245\034\161\326\274\156
\173\250\252\272\156\322\025\210\110\105\235\242\374\203\320\314
\271\214\340\046\150\160\112\170\337\041\027\236\364\141\005\311
\025\310\317\026\332\065\141\211\224\103\250\204\250\061\230\170
\233\271\116\157\054\123\022\154\315\035\255\053\044\273\061\304
\053\377\203\104\157\266\075\044\167\011\352\277\052\250\037\152
\126\366\040\017\021\124\227\201\165\247\045\316\131\152\202\145
\357\267\352\347\342\215\165\213\156\362\335\117\246\136\142\234
\317\020\012\144\320\116\155\316\053\314\133\365\140\245\047\107
\215\151\364\177\316\033\160\336\160\033\040\326\156\315\246\001
\250\074\022\322\251\077\240\153\136\273\216\040\213\172\221\343
\265\150\356\240\347\304\001\164\250\123\013\053\112\232\017\145
\022\016\202\115\216\143\375\357\353\233\032\333\123\246\023\140
\257\302\175\327\307\154\027\045\324\163\373\107\144\120\201\200
\224\114\341\277\256\113\034\337\222\355\056\005\337\002\001\003
\243\121\060\117\060\013\006\003\125\035\017\004\004\003\002\001
\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\035\006\003\125\035\016\004\026\004\024\047\363\310
\025\036\156\232\002\011\026\255\053\240\211\140\137\332\173\057
\252\060\020\006\011\053\006\001\004\001\202\067\025\001\004\003

```
\002\001\000\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\003\202\001\001\000\235\235\204\204\243\101\251\174\167
\014\267\123\312\116\104\120\142\357\124\174\323\165\027\034\350
\340\306\110\113\266\376\114\072\031\201\126\260\126\356\031\226
\142\252\132\243\144\301\366\116\124\063\306\167\376\305\034\272
\345\135\045\312\365\360\223\232\203\021\056\346\313\370\164\105
\376\347\005\270\253\347\337\313\113\341\067\204\332\271\213\227
\160\036\360\342\213\327\260\330\016\235\261\151\326\052\221\173
\251\111\117\176\346\216\225\330\203\047\074\325\150\111\016\324
\235\366\056\353\247\276\353\060\244\254\037\104\374\225\253\063
\006\373\175\140\012\336\264\212\143\260\234\251\362\244\271\123
\001\207\320\150\244\047\177\253\377\351\372\311\100\070\210\147
\264\071\306\204\157\127\311\123\333\272\216\356\300\103\262\370
\011\203\156\377\146\317\076\357\027\263\130\030\045\011\064\136
\343\313\326\024\266\354\362\222\157\164\344\057\201\052\325\222
\221\340\340\227\074\062\150\005\205\113\321\367\127\342\122\035
\223\032\124\237\005\160\300\112\161\140\036\103\013\140\036\376
\243\316\201\031\341\013\065
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Cisco Root CA 2048"

Issuer: CN=Cisco Root CA 2048,O=Cisco Systems

Serial Number:5f:f8:7b:28:2b:54:dc:8d:42:a3:15:b5:68:c9:ad:ff

Subject: CN=Cisco Root CA 2048,O=Cisco Systems

Not Valid Before: Fri May 14 20:17:12 2004

Not Valid After: Mon May 14 20:25:42 2029

Fingerprint (MD5): be:39:5a:be:07:8a:b1:12:17:25:cc:1d:46:34:3c:b2

Fingerprint (SHA1): de:99:0c:ed:99:e0:43:1f:60:ed:c3:93:7e:7c:d5:bf:0e:d9:e5:fa

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Cisco Root CA 2048"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\336\231\014\355\231\340\103\037\140\355\303\223\176\174\325\277
\016\331\345\372
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\276\071\132\276\007\212\261\022\027\045\314\035\106\064\074\262
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\065\061\026\060\024\006\003\125\004\012\023\015\103\151\163
```

```
\143\157\040\123\171\163\164\145\155\163\061\033\060\031\006\003  
\125\004\003\023\022\103\151\163\143\157\040\122\157\157\164\040  
\103\101\040\062\060\064\070
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\137\370\173\050\053\124\334\215\102\243\025\265\150\311  
\255\377
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "CA Disig"

Issuer: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK

Serial Number: 1 (0x1)

Subject: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK

Not Valid Before: Wed Mar 22 01:39:34 2006

Not Valid After: Tue Mar 22 01:39:34 2016

Fingerprint (MD5): 3f:45:96:39:e2:50:87:f7:bb:fe:98:0c:3c:20:98:e6

Fingerprint (SHA1): 2a:c8:d5:8b:57:ce:bf:2f:49:af:f2:fc:76:8f:51:14:62:90:7a:41

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CA Disig"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061  
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163  
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104  
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125  
\004\003\023\010\103\101\040\104\151\163\151\147
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061  
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163  
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104  
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125  
\004\003\023\010\103\101\040\104\151\163\151\147
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\001\001
```

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\017\060\202\002\367\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061\023
\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163\154
\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104\151
\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125\004
\003\023\010\103\101\040\104\151\163\151\147\060\036\027\015\060
\066\060\063\062\062\060\061\063\071\063\064\132\027\015\061\066
\060\063\062\062\060\061\063\071\063\064\132\060\112\061\013\060
\011\006\003\125\004\006\023\002\123\113\061\023\060\021\006\003
\125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061
\023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040
\141\056\163\056\061\021\060\017\006\003\125\004\003\023\010\103
\101\040\104\151\163\151\147\060\202\001\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060
\202\001\012\002\202\001\001\000\222\366\061\301\175\210\375\231
\001\251\330\173\362\161\165\361\061\306\363\165\146\372\121\050
\106\204\227\170\064\274\154\374\274\105\131\210\046\030\112\304
\067\037\241\112\104\275\343\161\004\365\104\027\342\077\374\110
\130\157\134\236\172\011\272\121\067\042\043\146\103\041\260\074
\144\242\370\152\025\016\077\353\121\341\124\251\335\006\231\327
\232\074\124\213\071\003\077\017\305\316\306\353\203\162\002\250
\037\161\363\055\370\165\010\333\142\114\350\372\316\371\347\152
\037\266\153\065\202\272\342\217\026\222\175\005\014\154\106\003
\135\300\355\151\277\072\301\212\240\350\216\331\271\105\050\207
\010\354\264\312\025\276\202\335\265\104\213\055\255\206\014\150
\142\155\205\126\362\254\024\143\072\306\321\231\254\064\170\126
\113\317\266\255\077\214\212\327\004\345\343\170\114\365\206\252
\365\217\372\075\154\161\243\055\312\147\353\150\173\156\063\251
\014\202\050\250\114\152\041\100\025\040\014\046\133\203\302\251
\026\025\300\044\202\135\053\026\255\312\143\366\164\000\260\337
\103\304\020\140\126\147\143\105\002\003\001\000\001\243\201\377
\060\201\374\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\215
\262\111\150\235\162\010\045\271\300\047\365\120\223\126\110\106
\161\371\217\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\066\006\003\125\035\021\004\057\060\055\201\023
\143\141\157\160\145\162\141\164\157\162\100\144\151\163\151\147
\056\163\153\206\026\150\164\164\160\072\057\057\167\167\167\056
\144\151\163\151\147\056\163\153\057\143\141\060\146\006\003\125
\035\037\004\137\060\135\060\055\240\053\240\051\206\047\150\164
\164\160\072\057\057\167\167\167\056\144\151\163\151\147\056\163
\153\057\143\141\057\143\162\154\057\143\141\137\144\151\163\151
\147\056\143\162\154\060\054\240\052\240\050\206\046\150\164\164
\160\072\057\057\143\141\056\144\151\163\151\147\056\163\153\057
\143\141\057\143\162\154\057\143\141\137\144\151\163\151\147\056
\143\162\154\060\032\006\003\125\035\040\004\023\060\021\060\017

```
\006\015\053\201\036\221\223\346\012\000\000\000\001\001\001\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\001\001\000\135\064\164\141\114\257\073\330\377\237\155\130\066
\034\075\013\201\015\022\053\106\020\200\375\347\074\047\320\172
\310\251\266\176\164\060\063\243\072\212\173\164\300\171\171\102
\223\155\377\261\051\024\202\253\041\214\057\027\371\077\046\057
\365\131\306\357\200\006\267\232\111\051\354\316\176\161\074\152
\020\101\300\366\323\232\262\174\132\221\234\300\254\133\310\115
\136\367\341\123\377\103\167\374\236\113\147\154\327\363\203\321
\240\340\177\045\337\270\230\013\232\062\070\154\060\240\363\377
\010\025\063\367\120\112\173\076\243\076\040\251\334\057\126\200
\012\355\101\120\260\311\364\354\262\343\046\104\000\016\157\236
\006\274\042\226\123\160\145\304\120\012\106\153\244\057\047\201
\022\047\023\137\020\241\166\316\212\173\067\352\303\071\141\003
\225\230\072\347\154\210\045\010\374\171\150\015\207\175\142\370
\264\137\373\305\330\114\275\130\274\077\103\133\324\036\001\115
\074\143\276\043\357\214\315\132\120\270\150\124\371\012\231\063
\021\000\341\236\302\106\167\202\365\131\006\214\041\114\207\011
\315\345\250
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "CA Disig"

Issuer: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK

Serial Number: 1 (0x1)

Subject: CN=CA Disig,O=Disig a.s.,L=Bratislava,C=SK

Not Valid Before: Wed Mar 22 01:39:34 2006

Not Valid After: Tue Mar 22 01:39:34 2016

Fingerprint (MD5): 3f:45:96:39:e2:50:87:f7:bb:fe:98:0c:3c:20:98:e6

Fingerprint (SHA1): 2a:c8:d5:8b:57:ce:bf:2f:49:af:f2:fc:76:8f:51:14:62:90:7a:41

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CA Disig"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\052\310\325\213\127\316\277\057\111\257\362\374\166\217\121\024
\142\220\172\101
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\077\105\226\071\342\120\207\367\273\376\230\014\074\040\230\346
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\123\113\061
\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163
\154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104
\151\163\151\147\040\141\056\163\056\061\021\060\017\006\003\125
\004\003\023\010\103\101\040\104\151\163\151\147
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\001\001
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "UCA Global Root"

Issuer: CN=UCA Global Root,O=UniTrust,C=CN

Serial Number: 8 (0x8)

Subject: CN=UCA Global Root,O=UniTrust,C=CN

Not Valid Before: Tue

```
Jan 01 00:00:00 2008
```

Not Valid After: Thu Dec 31 00:00:00 2037

Fingerprint (MD5): c1:d9:51:c0:84:b8:6a:75:e8:2f:d7:d6:5f:7e:ac:46

Fingerprint (SHA1): 0b:97:2c:9e:a6:e7:cc:58:d9:3b:20:bf:71:ec:41:2e:72:09:fa:bf

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "UCA Global Root"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\001\010
```

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\222\060\202\003\172\240\003\002\001\002\002\001\010
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021
\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165\163
\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101\040
\107\154\157\142\141\154\040\122\157\157\164\060\036\027\015\060
\070\060\061\060\061\060\060\060\060\060\060\132\027\015\063\067
\061\062\063\061\060\060\060\060\060\060\132\060\072\061\013\060
\011\006\003\125\004\006\023\002\103\116\061\021\060\017\006\003
\125\004\012\023\010\125\156\151\124\162\165\163\164\061\030\060
\026\006\003\125\004\003\023\017\125\103\101\040\107\154\157\142
\141\154\040\122\157\157\164\060\202\002\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060
\202\002\012\002\202\002\001\000\332\263\345\006\120\077\366\163
\367\304\062\277\106\245\045\142\063\207\260\150\376\247\337\210
\003\143\175\002\226\375\353\207\311\356\342\010\273\235\273\273
\344\101\217\307\060\211\017\155\044\300\004\154\024\224\201\115
\240\015\164\146\363\360\205\257\370\144\031\336\271\351\201\223
\320\050\205\231\107\102\112\054\074\070\047\112\314\377\371\154
\031\327\265\363\357\233\256\133\064\006\327\217\242\023\006\234
\212\204\102\325\263\243\220\150\155\201\220\356\115\204\354\114
\160\116\055\336\044\071\316\031\000\103\223\170\371\010\206\035
\103\321\364\162\274\005\300\147\372\300\121\322\311\205\007\044
\256\071\036\172\315\101\322\066\253\141\352\053\253\360\040\125
\231\074\155\055\034\056\056\165\226\330\162\227\340\014\312\151
\163\356\165\053\025\011\340\216\155\273\332\023\377\106\250\350
\000\014\254\007\057\035\271\272\271\321\240\367\231\236\164\134
\031\005\146\061\317\076\052\122\376\157\237\363\271\275\371\301
\201\365\067\332\056\114\201\045\135\366\331\224\232\323\065\213
\040\050\067\137\121\353\175\142\307\251\223\321\371\320\064\313
\251\047\046\054\050\220\222\073\125\143\267\027\016\124\163\253
\257\174\354\072\253\160\063\254\041\373\042\046\263\206\254\043
\251\327\177\155\313\010\040\362\257\100\365\377\104\107\161\335
\047\335\023\050\241\352\166\071\371\020\240\240\115\100\244\047
\262\131\025\053\154\055\044\267\044\143\170\367\103\030\172\017
\115\021\343\350\254\207\102\215\347\130\161\244\253\156\242\300
\227\174\273\343\023\113\312\333\273\153\010\371\151\264\004\162
\325\303\106\271\167\352\377\272\373\351\360\072\014\065\366\217
\017\256\006\204\026\335\224\125\324\357\312\047\267\003\074\305
\034\046\052\365\074\250\245\225\233\206\361\212\211\147\370\307
\014\146\261\355\101\277\202\246\000\150\072\042\064\356\036\353
\345\157\211\164\117\152\252\152\250\127\147\122\324\040\141\301
\316\123\313\375\044\177\137\046\337\241\010\151\226\240\236\376
\111\103\342\323\352\332\304\361\210\061\041\156\034\341\315\363
\165\016\040\104\026\314\175\163\164\065\105\054\073\201\324\040
\354\266\011\214\076\110\262\111\002\003\001\000\001\243\201\242
\060\201\237\060\013\006\003\125\035\017\004\004\003\002\001\006
\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060\143

\006\003\125\035\045\004\134\060\132\006\010\053\006\001\005\005
\007\003\001\006\010\053\006\001\005\005\007\003\002\006\010\053
\006\001\005\005\007\003\003\006\010\053\006\001\005\005\007\003
\004\006\010\053\006\001\005\005\007\003\005\006\010\053\006\001
\005\005\007\003\006\006\010\053\006\001\005\005\007\003\007\006
\010\053\006\001\005\005\007\003\010\006\010\053\006\001\005\005
\007\003\011\060\035\006\003\125\035\016\004\026\004\024\331\303
\323\370\200\222\147\314\135\322\072\242\327\161\242\264\304\070
\200\055\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\003\202\002\001\000\320\210\171\312\010\252\367\013\064\240
\116\011\302\351\176\065\110\211\160\204\043\057\121\303\053\057
\136\333\123\153\133\165\010\052\124\272\062\016\325\306\161\205
\261\227\111\200\366\204\320\360\272\267\161\224\310\171\153\246
\305\104\350\102\242\255\045\055\127\057\346\326\061\051\372\031
\211\124\051\176\267\176\107\066\151\055\156\062\274\324\165\332
\102\163\270\116\345\203\100\163\262\135\337\324\104\163\246\142
\013\333\252\156\005\214\310\177\106\117\071\205\220\235\274\033
\124\051\254\245\327\376\345\130\126\127\155\054\231\241\111\041
\325\141\306\214\141\341\165\044\301\001\335\055\033\066\303\057
\022\314\013\326\170\213\165\200\351\101\271\210\261\312\074\251
\026\306\116\025\343\162\066\366\324\240\101\205\257\212\145\160
\115\265\104\020\120\354\355\337\155\346\331\306\300\022\361\113
\072\057\163\351\074\251\356\033\252\057\065\245\233\237\115\305
\064\204\137\046\024\151\263\043\261\211\162\024\370\351\115\121
\042\003\377\112\206\304\034\350\173\171\012\333\107\045\201\176
\374\064\204\254\131\270\130\103\344\075\103\011\124\164\302\320
\375\331\357\156\131\367\162\140\231\166\157\365\047\247\273\203
\244\112\201\354\051\201\364\167\113\341\102\022\125\324\206\052
\022\266\360\125\233\001\056\335\366\250\343\031\303\316\107\057
\300\170\141\030\132\307\145\374\235\106\133\127\334\174\016\273
\226\203\020\174\125\030\011\004\256\321\367\213\052\076\240\346
\120\326\060\066\327\347\213\070\123\354\111\104\340\317\244\337
\361\123\173\213\132\266\366\021\220\113\326\165\363\376\002\363
\051\257\360\043\162\175\024\355\251\135\337\172\201\236\233\222
\042\374\036\370\001\105\101\227\307\153\001\141\276\063\150\362
\240\145\204\146\274\340\052\244\150\323\161\354\307\010\336\243
\303\311\066\112\064\361\027\342\200\257\040\041\223\224\036\346
\025\323\124\142\361\265\070\057\343\314\271\147\004\251\272\345
\356\371\020\156\313\056\176\023\257\222\024\376\363\047\163\173
\070\374\163\155\271\271\210\366\156\214\013\365\374\377\011\016
\263\055\136\173\165\343\222\044\342\346\341\130\076\113\050\003
\165\153\030\233\107\014

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "UCA Global Root"
# Issuer: CN=UCA Global Root,O=UniTrust,C=CN
# Serial Number: 8 (0x8)
# Subject: CN=UCA Global Root,O=UniTrust,C=CN
# Not Valid Before: Tue Jan 01 00:00:00 2008
# Not Valid After: Thu Dec 31 00:00:00 2037
# Fingerprint (MD5): c1:d9:51:c0:84:b8:6a:75:e8:2f:d7:d6:5f:7e:ac:46
# Fingerprint (SHA1): 0b:97:2c:9e:a6:e7:cc:58:d9:3b:20:bf:71:ec:41:2e:72:09:fa:bf
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\013\227\054\236\246\347\314\130\331\073\040\277\161\354\101\056
\162\011\372\277
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\301\331\121\300\204\270\152\165\350\057\327\326\137\176\254\106
END
CKA_ISSUER MULTILINE_OCTAL
\060\072\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\030\060\026\006\003\125\004\003\023\017\125\103\101
\040\107\154\157\142\141\154\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\010
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "UCA Root"
# Issuer: CN=UCA Root,O=UniTrust,C=CN
# Serial Number: 9 (0x9)
# Subject: CN=UCA Root,O=UniTrust,C=CN
# Not Valid Before: Thu Jan 01 00:00:00 2004
# Not Valid After: Mon Dec 31 00:00:00 2029
# Fingerprint (MD5): 8f:91:e7:ee:e3:fc:da:86:ca:fc:dc:70:ed:b7:b7:0c
# Fingerprint (SHA1): 82:50:be:d5:a2:14:43:3a:66:37:7c:bc:10:ef:83:f6:69:da:3a:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE
CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101
\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101
\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\011
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\204\060\202\002\154\240\003\002\001\002\002\001\011
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021
\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165\163
\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101\040
\122\157\157\164\060\036\027\015\060\064\060\061\060\061\060\060
\060\060\060\060\132\027\015\062\071\061\062\063\061\060\060\060
\060\060\060\132\060\063\061\013\060\011\006\003\125\004\006\023
\002\103\116\061\021\060\017\006\003\125\004\012\023\010\125\156
\151\124\162\165\163\164\061\021\060\017\006\003\125\004\003\023
\010\125\103\101\040\122\157\157\164\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\263\135\007\312\206\046
\175\153\342\373\070\011\016\314\202\302\152\032\000\242\025\137
\326\351\324\001\267\126\003\001\131\217\365\070\151\044\166\302
\136\053\305\366\053\277\257\373\101\375\017\132\374\253\327\203
\160\115\060\230\321\236\262\166\273\222\326\273\351\020\050\151
\050\066\104\350\361\054\327\130\174\044\326\177\002\072\360\201
\153\141\140\077\364\063\336\155\345\352\050\122\117\374\251\035
\143\174\013\272\352\256\304\150\106\344\336\217\301\247\262\266
\130\132\155\035\054\331\214\072\267\210\313\205\324\367\350\003
\136\375\262\115\120\350\326\037\377\256\002\077\213\117\226\041
\074\233\327\045\311\035\077\373\230\261\131\344\360\251\073\257
\263\315\205\054\342\140\106\314\157\216\240\353\360\064\305\361
\102\030\140\256\022\355\106\165\034\345\330\251\226\132\276\336
```

\132\326\170\147\226\133\223\167\120\362\156\033\336\226\121\112
\246\326\113\103\165\041\146\215\167\354\002\204\166\134\104\020
\266\035\141\154\344\243\040\175\267\215\272\017\221\165\307\215
\337\274\002\140\250\051\250\275\075\103\002\003\001\000\001\243
\201\242\060\201\237\060\013\006\003\125\035\017\004\004\003\002
\001\006\060\014\006\003\125\035\023\004\005\060\003\001\001\377
\060\143\006\003\125\035\045\004\134\060\132\006\010\053\006\001
\005\005\007\003\001\006\010\053\006\001\005\005\007\003\002\006
\010\053\006\001\005\005\007\003\003\006\010\053\006\001\005\005
\007\003\004\006\010\053\006\001\005\005\007\003\005\006\010\053
\006\001\005\005\007\003\006\006\010\053\006\001\005\005\007\003
\007\006\010\053\006\001\005\005\007\003\010\006\010\053\006\001
\005\005\007\003\011\060\035\006\003\125\035\016\004\026\004\024
\333\037\065\363\153\114\377\102\061\144\233\315\273\132\036\035
\110\020\267\356\060\015\006\011\052\206\110\206\367\015\001\001
\005\005\000\003\202\001\001\000\070\154\267\210\361\255\372\130
\067\164\321\350\160\336\234\047\131\313\344\025\327\240\303\140
\327\210\200\004\305\060\114\075\324\032\353\006\136\131\107\346
\274\146\313\340\010\374\350\065\354\142\175\312\300\332\301\170
\257\345\106\157\373\211\202\043\217\366\327\123\146\125\240\336
\045\022\073\161\066\026\125\022\166\373\075\370\124\133\061\272
\000\006\370\175\125\345\247\166\203\252\134\112\227\246\052\050
\337\275\306\154\013\043\225\216\063\177\036\136\100\037\023\124
\054\234\345\265\016\335\027\050\256\153\001\323\122\051\365\042
\037\220\071\364\334\142\150\360\074\206\107\354\270\005\105\273
\267\014\226\224\306\147\313\043\161\320\216\164\042\326\101\353
\003\250\266\352\276\304\001\022\265\263\135\100\166\006\040\324
\144\270\051\106\006\212\316\037\223\232\020\356\373\252\132\264
\334\057\325\053\313\366\327\005\204\230\005\221\013\204\367\075
\372\326\371\172\372\054\025\352\066\202\103\267\267\270\343\363
\161\001\355\103\103\242\005\105\303\050\005\007\065\343\001\245
\070\036\200\324\327\303\331\336

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "UCA Root"

Issuer: CN=UCA Root,O=UniTrust,C=CN

Serial Number: 9 (0x9)

Subject: CN=UCA Root,O=UniTrust,C=CN

Not Valid Before: Thu Jan 01 00:00:00 2004

Not Valid After: Mon Dec 31 00:00:00 2029

Fingerprint (MD5): 8f:91:e7:ee:e3:fc:da:86:ca:fc:dc:70:ed:b7:b7:0c

Fingerprint (SHA1): 82:50:be:d5:a2:14:43:3a:66:37:7c:bc:10:ef:83:f6:69:da:3a:67

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

```

CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Root"
CKA_CERT_SHA1_HASH
MULTILINE_OCTAL
\202\120\276\325\242\024\103\072\146\067\174\274\020\357\203\366
\151\332\072\147
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\217\221\347\356\343\374\332\206\312\374\334\160\355\267\267\014
END
CKA_ISSUER MULTILINE_OCTAL
\060\063\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\023\010\125\156\151\124\162\165
\163\164\061\021\060\017\006\003\125\004\003\023\010\125\103\101
\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\011
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Starfield Services Root Certificate Authority"
# Issuer: CN=Starfield Services Root Certificate
Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US
#
Serial Number: 0 (0x0)
# Subject: CN=Starfield Services Root Certificate
Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\,
Inc.,L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Mon Jun 02 00:00:00 2008
# Not Valid After: Mon Dec 31 23:59:59 2029
# Fingerprint (MD5): cf:8f:3b:62:a3:ca:ca:71:1b:a3:e1:cb:48:57:35:1f
# Fingerprint (SHA1): 5d:00:38:60:f0:02:ed:82:9d:ea:a4:18:68:f7:88:18:6d:62:12:7f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Services Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123

```

\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\176\060\202\003\146\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156
\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164
\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023
\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156
\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072\060
\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057\143
\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141\162
\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162\145

\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003\125
\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123\145
\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\060\036\027\015\060\070\060\066\060\062\060\060\060\060
\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065\071
\132\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172
\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143
\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004
\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143
\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061
\072\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057
\057\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164
\141\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057
\162\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006
\003\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040
\123\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162
\151\164\171\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\362\314\126\052\115\346\026\067\132\227\352\155
\065\070\321\020\233\333\270\334\251\004\011\225\063\056\011\305
\000\173\032\170\102\217\310\364\005\216\376\322\150\203\036\116
\231\315\027\333\107\076\120\363\211\322\347\334\230\373\005\370
\252\326\143\364\124\115\301\161\003\260\037\033\166\263\032\064
\060\163\361\050\062\140\203\375\264\234\327\266\322\042\067\174
\031\252\073\336\023\020\151\156\134\006\323\157\243\362\146\132
\166\102\110\257\200\321\124\131\075\324\271\324\333\355\271\253
\071\231\364\356\142\253\341\170\162\173\330\070\215\100\266\314
\334\022\000\160\103\205\151\330\030\343\312\127\162\237\264\337
\077\374\042\250\102\122\365\167\133\231\360\126\055\046\160\026
\066\022\302\047\236\127\246\174\320\043\361\171\334\243\223\130
\050\070\075\237\255\066\103\356\067\373\370\371\103\255\310\126
\362\224\022\136\102\353\163\270\023\015\313\246\325\206\271\252
\050\152\124\003\241\077\017\051\353\011\000\350\077\136\242\177
\027\075\241\053\370\276\320\165\035\244\204\343\253\027\145\006
\122\000\257\261\002\003\001\000\001\243\143\060\141\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035
\006\003\125\035\016\004\026\004\024\264\306\177\032\103\314\233
\165\135\057\304\113\362\213\230\020\351\361\121\020\060\037\006
\003\125\035\043\004\030\060\026\200\024\264\306\177\032\103\314
\233\165\135\057\304\113\362\213\230\020\351\361\121\020\060\015
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001
\001\000\254\200\273\304\045\005\013\130\244\344\176\051\176\257
\274\073\354\055\300\104\056\371\221\340\322\073\062\047\220\055
\366\200\011\134\302\253\145\044\332\070\020\106\304\111\322\375

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\232\253\050\110\167\210\306\351\157\321\107\221\325\065\117\024
\011\250\133\100\007\035\174\161\126\313\211\102\324\277\141\300
\042\367\056\337\253\363\162\103\213\100\350\224\353\260\046\332
\321\023\323\253\320\066\055\056\072\225\263\167\056\025\071\030
\014\151\272\252\200\355\361\123\116\063\233\150\004\342\240\060
\056\327\321\135\324\246\146\235\204\346\347\273\074\211\273\066
\235\374\027\251\075\125\053\212\373\233\304\114\204\377\337\322
\276\151\033\164\260\250\366\352\260\234\262\051\164\201\114\150
\072\232\177\163\045\071\365\023\340\146\221\151\324\127\113\267
\356\255\105\340\054\303\210\323\276\224\111\211\037\377\160\325
\133\155\071\023\260\035\313\230\346\147\143\015\143\366\373\303
\327\141\162\203\210\077\160\176\123\311\236\211\124\326\117\177
\175\161\271\256\361\140\213\167\140\354\370\277\372\152\243\234
\001\042
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Starfield Services Root Certificate Authority"

Issuer: CN=Starfield Services Root Certificate

Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\, Inc.,L=Scottsdale,ST=Arizona,C=US

Serial Number: 0 (0x0)

Subject: CN=Starfield Services Root Certificate

Authority,OU=http://certificates.starfieldtech.com/repository/,O=Starfield Technologies\, Inc.,L=Scottsdale,ST=Arizona,C=US

Not Valid Before: Mon Jun 02 00:00:00 2008

Not Valid After: Mon Dec 31 23:59:59 2029

Fingerprint (MD5): cf:8f:3b:62:a3:ca:ca:71:1b:a3:e1:cb:48:57:35:1f

#

Fingerprint (SHA1): 5d:00:38:60:f0:02:ed:82:9d:ea:a4:18:68:f7:88:18:6d:62:12:7f

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Starfield Services Root Certificate Authority"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\135\000\070\140\360\002\355\202\235\352\244\030\150\367\210\030
\155\142\022\177
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\317\217\073\142\243\312\312\161\033\243\341\313\110\127\065\037
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\317\061\013\060\011\006\003\125\004\006\023\002\125\123
```



```
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\072
\060\070\006\003\125\004\013\023\061\150\164\164\160\072\057\057
\143\145\162\164\151\146\151\143\141\164\145\163\056\163\164\141
\162\146\151\145\154\144\164\145\143\150\056\143\157\155\057\162
\145\160\157\163\151\164\157\162\171\057\061\066\060\064\006\003
\125\004\003\023\055\123\164\141\162\146\151\145\154\144\040\123
\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\001\000
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "I.CA - Qualified root certificate"

Issuer: O=První certifikační autorita\, a.s.,CN=I.CA - Qualified root certificate,C=CZ

Serial Number:9d:2a:60

Subject: O=První certifikační autorita\, a.s.,CN=I.CA - Qualified root certificate,C=CZ

Not Valid Before: Tue Apr

01 00:00:00 2008

Not Valid After: Sun Apr 01 00:00:00 2018

Fingerprint (MD5): 48:d1:1e:62:78:01:c2:6e:43:69:a4:2c:ee:13:0a:b5

Fingerprint (SHA1): 64:90:2a:d7:27:7a:f3:e3:2c:d8:cc:1d:c7:9d:e1:fd:7f:80:69:ea

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "I.CA - Qualified root certificate"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\004\000\235\052\140

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\071\060\202\003\041\240\003\002\001\002\002\004\000
\235\052\140\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\150\061\013\060\011\006\003\125\004\006\023\002\103
\132\061\052\060\050\006\003\125\004\003\014\041\111\056\103\101
\040\055\040\121\165\141\154\151\146\151\145\144\040\162\157\157
\164\040\143\145\162\164\151\146\151\143\141\164\145\061\055\060
\053\006\003\125\004\012\014\044\120\162\166\156\303\255\040\143
\145\162\164\151\146\151\153\141\304\215\156\303\255\040\141\165
\164\157\162\151\164\141\054\040\141\056\163\056\060\036\027\015
\060\070\060\064\060\061\060\060\060\060\060\060\132\027\015\061
\070\060\064\060\061\060\060\060\060\060\060\132\060\150\061\013
\060\011\006\003\125\004\006\023\002\103\132\061\052\060\050\006
\003\125\004\003\014\041\111\056\103\101\040\055\040\121\165\141
\154\151\146\151\145\144\040\162\157\157\164\040\143\145\162\164
\151\146\151\143\141\164\145\061\055\060\053\006\003\125\004\012
\014\044\120\162\166\156\303\255\040\143\145\162\164\151\146\151
\153\141\304\215\156\303\255\040\141\165\164\157\162\151\164\141
\054\040\141\056\163\056\060\202\001\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202
\001\012\002\202\001\001\000\253\010\210\244\360\164\362\237\370
\333\326\167\215\060\031\076\246\305\307\212\305\275\335\346\002
\256\216\075\120\165\270\257\175\066\253\376\365\355\010\147\264
\000\212\230\301\003\143\210\121\362\033\066\211\164\132\055\310
\304\202\304\077\271\210\375\154\375\072\035\025\005\104\225\200
\032\246\206\313\041\165\220\205\134\260\160\000\207\064\250\321
\037\111\375\154\070\155\152\254\270\105\237\274\024\327\146\324
\041\343\047\012\215\165\340\132\057\012\113\264\347\176\163\243
\052\275\160\361\221\206\010\217\277\220\204\034\207\251\365\231
\045\045\224\301\343\156\007\301\113\007\133\124\374\064\313\106
\067\234\305\241\040\316\246\254\207\251\203\074\070\117\300\100
\363\351\377\233\327\071\166\344\023\043\165\265\377\241\102\256
\134\206\117\305\116\103\266\231\013\122\123\040\250\263\302\114
\323\000\054\025\322\131\154\012\237\041\265\163\026\171\036\206

\045\356\032\373\223\236\255\143\361\114\342\166\061\136\067\357
\374\320\251\066\344\371\021\351\172\374\120\347\101\043\003\064
\270\175\272\016\317\335\123\002\003\001\000\001\243\201\352\060
\201\347\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\201\244\006\003\125\035\040\004\201\234\060\201
\231\060\201\226\006\014\053\006\001\004\001\201\270\110\001\004
\000\001\060\201\205\060\201\202\006\010\053\006\001\005\005\007
\002\002\060\166\032\164\124\145\156\164\157\040\143\145\162\164
\151\146\151\153\141\164\040\152\145\040\166\171\144\141\156\040
\152\141\153\157\040\153\166\141\154\151\146\151\153\157\166\141
\156\171\040\163\171\163\164\145\155\157\166\171\040\143\145\162
\164\151\146\151\153\141\164\040\166\040\163\157\165\154\141\144
\165\040\163\145\040\172\141\153\157\156\145\155\040\062\062\067
\057\062\060\060\060\040\123\142\056\040\166\040\160\154\141\164
\156\145\155\040\172\156\145\156\151\056\060\035\006\003\125\035
\016\004\026\004\024\150\235\176\326\304\045\071\373\073\240\067
\326\117\334\214\321\172\360\126\131\060\015\006\011\052\206\110
\206\367\015\001\001\005\005\000\003\202\001\001\000\162\365\274
\006\215\322\054\226\362\202\333\130\173\107\360\100\144\345\056
\033\357\372\340\372\323\361\162\110\001\104\362\210\364\336\230
\201\123\204\347\175\116\107\347\061\067\126\256\263\301\060\157
\306\253\110\203\365\230\123\122\151\052\050\301\100\145\353\145
\347\264\060\013\360\253\016\245\022\045\277\364\120\135\277\243
\176\345\321\164\370\012\050\256\102\234\260\024\122\304\240\140
\135\367\105\027\102\272\102\055\233\222\373\156\224\263\160\107
\040\010\235\123\360\260\255\275\251\204\132\335\007\052\014\315
\053\155\141\050\337\073\222\050\354\121\201\177\121\174\216\056
\177\235\351\274\301\064\075\213\255\201\255\361\036\164\146\103
\074\101\115\270\056\063\117\261\072\036\333\022\337\066\216\161
\377\127\143\261\326\217\264\075\206\022\152\317\102\060\264\223
\026\352\231\352\002\133\376\010\356\262\117\160\277\063\000\347
\172\112\070\241\362\110\221\246\036\313\043\262\070\235\360\056
\111\242\311\210\126\145\145\216\072\147\105\214\214\013\342\252
\261\113\007\377\261\037\272\024\317\162\372\247\170

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "I.CA - Qualified root certificate"

Issuer: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

Serial Number:9d:2a:60

Subject: O=První certifikační autorita, a.s.,CN=I.CA - Qualified root certificate,C=CZ

Not Valid Before: Tue Apr 01 00:00:00 2008

```
# Not Valid After: Sun Apr 01 00:00:00 2018
# Fingerprint (MD5): 48:d1:1e:62:78:01:c2:6e:43:69:a4:2c:ee:13:0a:b5
# Fingerprint (SHA1): 64:90:2a:d7:27:7a:f3:e3:2c:d8:cc:1d:c7:9d:e1:fd:7f:80:69:ea
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Qualified root certificate"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\144\220\052\327\047\172\363\343\054\330\314\035\307\235\341\375
\177\200\151\352
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\110\321\036\142\170\001\302\156\103\151\244\054\356\023\012\265
END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\052\060\050\006\003\125\004\003\014\041\111\056\103\101\040\055
\040\121\165\141\154\151\146\151\145\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\055\060\053\006
\003\125\004\012\014\044\120\162\166\156\303\255\040\143\145\162
\164\151\146\151\153\141\304\215\156\303\255\040\141\165\164\157
\162\151\164\141\054\040\141\056\163\056
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\000\235\052\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "I.CA - Standard root certificate"
# Issuer: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
# Serial Number:13:d6:20
# Subject: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
#
```

```
Not Valid Before: Tue Apr 01 00:00:00 2008
# Not Valid After: Sun Apr 01 00:00:00 2018
# Fingerprint (MD5): 04:68:e9:24:7e:41:ce:d7:6c:44:16:30:70:3d:dd:b9
# Fingerprint (SHA1): ab:16:dd:14:4e:cd:c0:fc:4b:aa:b6:2e:cf:04:08:89:6f:de:52:b7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard root certificate"
```

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141
\040\141\056\163\056

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141
\040\141\056\163\056

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\003\023\326\040

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\056\060\202\003\026\240\003\002\001\002\002\003\023
\326\040\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132
\061\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040
\055\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040
\143\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006
\003\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164
\151\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164
\141\040\141\056\163\056\060\036\027\015\060\070\060\064\060\061
\060\060\060\060\060\060\132\027\015\061\070\060\064\060\061\060
\060\060\060\060\060\132\060\143\061\013\060\011\006\003\125\004
\006\023\002\103\132\061\051\060\047\006\003\125\004\003\023\040
\111\056\103\101\040\055\040\123\164\141\156\144\141\162\144\040
\162\157\157\164\040\143\145\162\164\151\146\151\143\141\164\145
\061\051\060\047\006\003\125\004\012\023\040\120\162\166\156\151
\040\143\145\162\164\151\146\151\153\141\143\156\151\040\141\165
\164\157\162\151\164\141\040\141\056\163\056\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\321\055\025\304
\071\114\152\241\304\345\363\053\264\375\251\026\351\270\121\217
\067\221\331\247\323\227\220\266\160\151\207\365\257\131\322\142
\101\130\325\363\225\215\002\025\372\146\234\301\041\024\330\037
\255\372\052\154\164\126\241\142\341\361\260\255\270\376\322\243

\340\221\241\265\256\123\255\215\244\015\017\131\140\227\052\374
\243\056\163\065\043\163\314\250\246\241\024\155\277\211\303\204
\070\363\144\131\314\061\363\340\371\047\140\012\074\101\005\157
\132\122\360\217\156\122\156\354\136\210\157\340\100\214\041\107
\127\042\351\070\156\346\372\363\044\264\256\257\057\163\077\200
\325\062\217\214\331\204\031\330\140\316\333\151\215\076\257\002
\257\256\336\257\120\365\317\346\263\141\030\304\340\335\360\116
\112\146\015\172\163\040\267\344\324\223\206\107\141\330\117\312
\072\216\253\302\077\306\042\027\243\135\235\040\306\305\016\044
\151\310\246\175\146\006\315\106\346\063\341\103\164\223\365\203
\142\322\260\105\042\001\244\166\275\353\121\223\130\154\372\032
\241\237\165\200\332\330\000\342\361\210\115\077\002\003\001\000
\001\243\201\352\060\201\347\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004
\026\004\024\353\067\244\276\271\157\140\027\373\323\377\055\140
\341\004\036\257\317\306\323\060\201\244\006\003\125\035\040\004
\201\234\060\201\231\060\201\226\006\014\053\006\001\004\001\201
\270\110\001\001\000\001\060\201\205\060\201\202\006\010\053\006
\001\005\005\007\002\002\060\166\032\164\124\145\156\164\157\040
\143\145\162\164\151\146\151\153\141\164\040\152\145\040\166\171
\144\141\156\040\152\141\153\157\040\153\166\141\154\151\146\151
\153\157\166\141\156\171\040\163\171\163\164\145\155\157\166\171
\040\143\145\162\164\151\146\151\153\141\164\040\166\040\163\157
\165\154\141\144\165\040\163\145\040\172\141\153\157\156\145\155
\040\062\062\067\057\062\060\060\060\040\123\142\056\040\166\040
\160\154\141\164\156\145\155\040\172\156\145\156\151\056\060\015
\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001
\001\000\027\042\130\252\057\030\125\002\241\114\066\111\067\113
\233\163\272\256\143\066\016\213\053\204\105\067\314\372\340\147
\367\240\163\152\147\150\126\274\141\250\064\232\050\272\146\054
\141\233\213\034\370\004\160\214\206\343\101\357\224\171\015\335
\064\207\004\356\265\236\061\153\071\364\176\130\345\362\260\004
\115\251\127\045\111\340\013\325\344\354\175\016\076\073\001\340
\214\374\122\220\223\346\362\260\253\365\061\167\314\321\311\103
\202\253\017\056\264\371\230\256\076\343\104\364\244\003\151\125
\332\134\216\333\301\271\254\344\230\325\166\025\106\241\056\132
\014\042\140\240\302\353\160\177\161\003\260\150\323\061\144\315
\352\313\113\125\211\202\076\134\146\313\032\010\230\107\302\336
\331\056\070\114\005\375\055\214\372\343\042\045\271\222\375\326
\262\055\312\242\064\234\337\111\357\325\204\001\054\222\377\005
\101\012\147\306\102\153\236\313\330\237\220\274\015\017\020\175
\307\146\275\352\163\007\340\030\352\121\201\264\105\100\074\017
\241\042\067\025\001\205\251\056\174\016\137\135\316\152\223\276
\331\276

END

CKA_NSS_MOZILLA_CA_POLICY

```
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only
Certificate
# Trust for "I.CA - Standard root certificate"
# Issuer: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
# Serial Number:13:d6:20
# Subject: O=Prvni certifikacni autorita a.s.,CN=I.CA - Standard root certificate,C=CZ
# Not Valid Before: Tue Apr 01 00:00:00 2008
# Not Valid After: Sun Apr 01 00:00:00 2018
# Fingerprint (MD5): 04:68:e9:24:7e:41:ce:d7:6c:44:16:30:70:3d:dd:b9
# Fingerprint (SHA1): ab:16:dd:14:4e:cd:c0:fc:4b:aa:b6:2e:cf:04:08:89:6f:de:52:b7
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "I.CA - Standard root certificate"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\253\026\335\024\116\315\300\374\113\252\266\056\317\004\010\211
\157\336\122\267
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\004\150\351\044\176\101\316\327\154\104\026\060\160\075\335\271
END
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\103\132\061
\051\060\047\006\003\125\004\003\023\040\111\056\103\101\040\055
\040\123\164\141\156\144\141\162\144\040\162\157\157\164\040\143
\145\162\164\151\146\151\143\141\164\145\061\051\060\047\006\003
\125\004\012\023\040\120\162\166\156\151\040\143\145\162\164\151
\146\151\153\141\143\156\151\040\141\165\164\157\162\151\164\141
\040\141\056\163\056
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\023\326\040
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"
# Issuer: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR
# Serial Number:44:99:8d:3c:c0:03:27:bd:9c:76:95:b9:ea:db:ac:b5
```

```
# Subject: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi
A.S.,C=TR
# Not Valid Before: Thu Jan 04 11:32:48 2007
# Not Valid After: Wed Jan 04 11:32:48 2017
# Fingerprint (MD5): 3d:41:29:cb:1e:aa:11:74:cd:5d:b0:62:af:b0:43:5b
# Fingerprint (SHA1): dd:e1:d2:a9:01:80:2e:1d:87:5e:84:b3:80:7e:4b:b1:fd:99:41:34
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154
\141\171\151\143\151\163\151
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154
\141\171\151\143\151\163\151
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\104\231\215\074\300\003\047\275\234\166\225\271\352\333
\254\265
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\266\060\202\002\236\240\003\002\001\002\002\020\104
\231\215\074\300\003\047\275\234\166\225\271\352\333\254\265\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\165
\061\013\060\011\006\003\125\004\006\023\002\124\122\061\050\060
\046\006\003\125\004\012\023\037\105\154\145\153\164\162\157\156
\151\153\040\102\151\154\147\151\040\107\165\166\145\156\154\151
\147\151\040\101\056\123\056\061\074\060\072\006\003\125\004\003
\023\063\145\055\107\165\166\145\156\040\113\157\153\040\105\154
\145\153\164\162\157\156\151\153\040\123\145\162\164\151\146\151
```


\153\141\040\110\151\172\155\145\164\040\123\141\147\154\141\171
\151\143\151\163\151\060\036\027\015\060\067\060\061\060\064\061
\061\063\062\064\070\132\027\015\061\067\060\061\060\064\061\061
\063\062\064\070\132\060\165\061\013\060\011\006\003\125\004\006
\023\002\124\122\061\050\060\046\006\003\125\004\012\023\037\105
\154\145\153\164\162\157\156\151\153\040\102\151\154\147\151\040
\107\165\166\145\156\154\151\147\151\040\101\056\123\056\061\074
\060\072\006\003\125\004\003\023\063\145\055\107\165\166\145\156
\040\113\157\153\040\105\154\145\153\164\162\157\156\151\153\040
\123\145\162\164\151\146\151\153\141\040\110\151\172\155\145\164
\040\123\141\147\154\141\171\151\143\151\163\151\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\303\022\040
\236\260\136\000\145\215\116\106\273\200\134\351\054\006\227\325
\363\162\311\160\271\347\113\145\200\301\113\276\176\074\327\124
\061\224\336\325\022\272\123\026\002\352\130\143\357\133\330\363
\355\052\032\252\161\110\243\334\020\055\137\137\353\134\113\234
\226\010\102\045\050\021\314\212\132\142\001\120\325\353\011\123
\057\370\303\217\376\263\374\375\235\242\343\137\175\276\355\013
\340\140\353\151\354\063\355\330\215\373\022\111\203\000\311\213
\227\214\073\163\052\062\263\022\367\271\115\362\364\115\155\307
\346\326\046\067\010\362\331\375\153\134\243\345\110\134\130\274
\102\276\003\132\201\272\034\065\014\000\323\365\043\176\161\060
\010\046\070\334\045\021\107\055\363\272\043\020\245\277\274\002
\367\103\136\307\376\260\067\120\231\173\017\223\316\346\103\054
\303\176\015\362\034\103\146\140\313\141\061\107\207\243\117\256
\275\126\154\114\274\274\370\005\312\144\364\351\064\241\054\265
\163\341\302\076\350\310\311\064\045\010\134\363\355\246\307\224
\237\255\210\103\045\327\341\071\140\376\254\071\131\002\003\001
\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\237\356\104\263\224\325\372\221\117\056\331\125\232\004
\126\333\055\304\333\245\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\001\001\000\177\137\271\123\133\143
\075\165\062\347\372\304\164\032\313\106\337\106\151\034\122\317
\252\117\302\150\353\377\200\251\121\350\075\142\167\211\075\012
\165\071\361\156\135\027\207\157\150\005\301\224\154\331\135\337
\332\262\131\313\245\020\212\312\314\071\315\237\353\116\336\122
\377\014\360\364\222\251\362\154\123\253\233\322\107\240\037\164
\367\233\232\361\057\025\237\172\144\060\030\007\074\052\017\147
\312\374\017\211\141\235\145\245\074\345\274\023\133\010\333\343
\377\355\273\006\273\152\006\261\172\117\145\306\202\375\036\234
\213\265\015\356\110\273\270\275\252\010\264\373\243\174\313\237
\315\220\166\134\206\226\170\127\012\146\371\130\032\235\375\227
\051\140\336\021\246\220\034\031\034\356\001\226\042\064\064\056
\221\371\267\304\047\321\173\346\277\373\200\104\132\026\345\353
\340\324\012\070\274\344\221\343\325\353\134\301\254\337\033\152

```
\174\236\345\165\322\266\227\207\333\314\207\053\103\072\204\010
\257\253\074\333\367\074\146\061\206\260\235\123\171\355\370\043
\336\102\343\055\202\361\017\345\372\227
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"

Issuer: CN=e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR

Serial Number:44:99:8d:3c:c0:03:27:bd:9c:76:95:b9:ea:db:ac:b5

Subject: CN=e-Guven

Kok Elektronik Sertifika Hizmet Saglayicisi,O=Elektronik Bilgi Guvenligi A.S.,C=TR

Not Valid Before: Thu Jan 04 11:32:48 2007

Not Valid After: Wed Jan 04 11:32:48 2017

Fingerprint (MD5): 3d:41:29:cb:1e:aa:11:74:cd:5d:b0:62:af:b0:43:5b

Fingerprint (SHA1): dd:e1:d2:a9:01:80:2e:1d:87:5e:84:b3:80:7e:4b:b1:fd:99:41:34

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "e-Guven Kok Elektronik Sertifika Hizmet Saglayicisi"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\335\341\322\251\001\200\056\035\207\136\204\263\200\176\113\261
```

```
\375\231\101\064
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\075\101\051\313\036\252\021\164\315\135\260\142\257\260\103\133
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\124\122\061
```

```
\050\060\046\006\003\125\004\012\023\037\105\154\145\153\164\162
```

```
\157\156\151\153\040\102\151\154\147\151\040\107\165\166\145\156
```

```
\154\151\147\151\040\101\056\123\056\061\074\060\072\006\003\125
```

```
\004\003\023\063\145\055\107\165\166\145\156\040\113\157\153\040
```

```
\105\154\145\153\164\162\157\156\151\153\040\123\145\162\164\151
```

```
\146\151\153\141\040\110\151\172\155\145\164\040\123\141\147\154
```

```
\141\171\151\143\151\163\151
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\104\231\215\074\300\003\047\275\234\166\225\271\352\333
```

```
\254\265
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Japanese Government"
Issuer: OU=ApplicationCA,O=Japanese Government,C=JP
Serial Number: 49 (0x31)
Subject: OU=ApplicationCA,O=Japanese Government,C=JP
Not Valid Before: Wed Dec 12 15:00:00 2007
Not Valid After: Tue Dec 12 15:00:00 2017
Fingerprint (MD5): 7e:23:4e:5b:a7:a5:b4:25:e9:00:07:74:11:62:ae:d6
Fingerprint (SHA1): 7f:8a:b0:cf:d0:51:87:6a:66:f3:36:0f:47:c8:8d:8c:d3:35:fc:74

CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Japanese Government"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164
\151\157\156\103\101
END

CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164
\151\157\156\103\101
END

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\061
END

CKA_VALUE MULTILINE_OCTAL
\060\202\003\240\060\202\002\210\240\003\002\001\002\002\001\061
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061\034
\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145\163
\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060\024
\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164\151
\157\156\103\101\060\036\027\015\060\067\061\062\061\062\061\065
\060\060\060\060\132\027\015\061\067\061\062\061\062\061\065\060
\060\060\060\132\060\103\061\013\060\011\006\003\125\004\006\023
\002\112\120\061\034\060\032\006\003\125\004\012\023\023\112\141

\160\141\156\145\163\145\040\107\157\166\145\162\156\155\145\156
\164\061\026\060\024\006\003\125\004\013\023\015\101\160\160\154
\151\143\141\164\151\157\156\103\101\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\247\155\340\164\116\207
\217\245\006\336\150\242\333\206\231\113\144\015\161\360\012\005
\233\216\252\341\314\056\322\152\073\301\172\264\227\141\215\212
\276\306\232\234\006\264\206\121\344\067\016\164\170\176\137\212
\177\224\244\327\107\010\375\120\132\126\344\150\254\050\163\240
\173\351\177\030\222\100\117\055\235\365\256\104\110\163\066\006
\236\144\054\073\064\043\333\134\046\344\161\171\217\324\156\171
\042\271\223\301\312\315\301\126\355\210\152\327\240\071\041\004
\127\054\242\365\274\107\101\117\136\064\042\225\265\037\051\155
\136\112\363\115\162\276\101\126\040\207\374\351\120\107\327\060
\024\356\134\214\125\272\131\215\207\374\043\336\223\320\004\214
\375\357\155\275\320\172\311\245\072\152\162\063\306\112\015\005
\027\052\055\173\261\247\330\326\360\276\364\077\352\016\050\155
\101\141\043\166\170\303\270\145\244\363\132\256\314\302\252\331
\347\130\336\266\176\235\205\156\237\052\012\157\237\003\051\060
\227\050\035\274\267\317\124\051\116\121\061\371\047\266\050\046
\376\242\143\346\101\026\360\063\230\107\002\003\001\000\001\243
\201\236\060\201\233\060\035\006\003\125\035\016\004\026\004\024
\124\132\313\046\077\161\314\224\106\015\226\123\352\153\110\320
\223\376\102\165\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\131\006\003\125\035\021\004\122\060\120\244
\116\060\114\061\013\060\011\006\003\125\004\006\023\002\112\120
\061\030\060\026\006\003\125\004\012\014\017\346\227\245\346\234
\254\345\233\275\346\224\277\345\272\234\061\043\060\041\006\003
\125\004\013\014\032\343\202\242\343\203\227\343\203\252\343\202
\261\343\203\274\343\202\267\343\203\247\343\203\263\103\101\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\071\152\104\166\167\070\072\354\243\147\106\017
\371\213\006\250\373\152\220\061\316\176\354\332\321\211\174\172
\353\056\014\275\231\062\347\260\044\326\303\377\365\262\210\011
\207\054\343\124\341\243\246\262\010\013\300\205\250\310\322\234
\161\366\035\237\140\374\070\063\023\341\236\334\013\137\332\026
\120\051\173\057\160\221\017\231\272\064\064\215\225\164\305\176
\170\251\146\135\275\312\041\167\102\020\254\146\046\075\336\221
\253\375\025\360\157\355\154\137\020\370\363\026\366\003\212\217
\247\022\021\014\313\375\077\171\301\234\375\142\356\243\317\124
\014\321\053\137\027\076\343\076\277\300\053\076\011\233\376\210
\246\176\264\222\027\374\043\224\201\275\156\247\305\214\302\353
\021\105\333\370\101\311\226\166\352\160\137\171\022\153\344\243
\007\132\005\357\047\111\317\041\237\212\114\011\160\146\251\046
\301\053\021\116\063\322\016\374\326\154\322\016\062\144\150\377
\255\005\170\137\003\035\250\343\220\254\044\340\017\100\247\113
\256\213\050\267\202\312\030\007\346\267\133\164\351\040\031\177

```
\262\033\211\124
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Japanese Government"
#
  Issuer: OU=ApplicationCA,O=Japanese Government,C=JP
# Serial Number: 49 (0x31)
# Subject: OU=ApplicationCA,O=Japanese Government,C=JP
# Not Valid Before: Wed Dec 12 15:00:00 2007
# Not Valid After: Tue Dec 12 15:00:00 2017
# Fingerprint (MD5): 7e:23:4e:5b:a7:a5:b4:25:e9:00:07:74:11:62:ae:d6
# Fingerprint (SHA1): 7f:8a:b0:cf:d0:51:87:6a:66:f3:36:0f:47:c8:8d:8c:d3:35:fc:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Japanese Government"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\177\212\260\317\320\121\207\152\146\363\066\017\107\310\215\214
\323\065\374\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\176\043\116\133\247\245\264\045\351\000\007\164\021\142\256\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\034\060\032\006\003\125\004\012\023\023\112\141\160\141\156\145
\163\145\040\107\157\166\145\162\156\155\145\156\164\061\026\060
\024\006\003\125\004\013\023\015\101\160\160\154\151\143\141\164
\151\157\156\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\061
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "AdminCA-CD-T01"
# Issuer: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
```

```
# Serial Number: 1 (0x1)
# Subject: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH
# Not Valid Before: Wed Jan 25 13:36:19 2006
# Not Valid After: Mon Jan 25 12:36:19 2016
# Fingerprint (MD5): 5b:9e:fd:3b:60:35:ea:68:8e:52:fe:13:19:14:4a:a3
# Fingerprint (SHA1): 6b:81:44:6a:5c:dd:f4:74:a0:f8:00:ff:be:69:fd:0d:b6:28:75:16
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"AdminCA-CD-T01"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\115\060\202\003\065\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061\016
\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061\021
\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145
\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023\016
\101\144\155\151\156\103\101\055\103\104\055\124\060\061\060\036
\027\015\060\066\060\061\062\065\061\063\063\066\061\071\132\027
\015\061\066\060\061\062\065\061\062\063\066\061\071\132\060\155
```

\061\013\060\011\006\003\125\004\006\023\002\103\110\061\016\060
\014\006\003\125\004\012\023\005\141\144\155\151\156\061\021\060
\017\006\003\125\004\013\023\010\123\145\162\166\151\143\145\163
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\027\060\025\006\003\125\004\003\023\016\101
\144\155\151\156\103\101\055\103\104\055\124\060\061\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\322\064
\045\061\231\251\054\070\125\370\143\121\365\060\050\110\331\136
\046\004\001\343\020\027\044\102\320\177\237\362\110\307\350\024
\016\014\232\062\252\141\164\044\007\243\006\076\344\012\301\037
\127\105\024\217\177\255\157\251\277\030\076\307\143\106\150\051
\157\041\301\161\107\171\267\103\174\105\176\260\105\225\047\074
\305\276\154\040\250\331\132\200\123\205\305\156\171\134\332\001
\312\151\251\264\301\324\355\154\024\327\022\113\364\211\342\007
\177\020\237\027\025\352\112\304\253\353\102\044\027\375\277\305
\272\300\201\137\320\017\234\207\223\242\036\361\367\200\125\154
\042\345\113\132\026\253\156\340\270\205\022\035\220\063\054\154
\073\054\365\071\313\312\316\103\066\203\316\367\267\050\204\356
\074\314\201\223\376\133\015\355\211\271\066\027\337\236\351\227
\242\007\176\323\054\351\225\266\370\051\232\274\054\341\370\210
\254\123\127\021\204\226\005\132\324\115\271\374\325\116\073\311
\154\316\201\376\137\020\163\364\355\264\125\345\003\202\314\051
\275\366\243\142\232\306\313\350\041\273\235\076\374\011\002\003
\001\000\001\243\201\367\060\201\364\060\022\006\003\125\035\023
\001\001\377\004\010\060\006\001\001\377\002\001\000\060\201\256
\006\003\125\035\040\004\201\246\060\201\243\060\201\240\006\010
\140\205\164\001\021\003\025\001\060\201\223\060\110\006\010\053
\006\001\005\005\007\002\002\060\074\032\072\124\150\151\163\040
\151\163\040\164\150\145\040\101\144\155\151\156\103\101\055\103
\104\055\124\060\061\040\103\145\162\164\151\146\151\143\141\164
\145\040\120\162\141\143\164\151\143\145\040\123\164\141\164\145
\155\145\156\164\056\060\107\006\010\053\006\001\005\005\007\002
\001\026\073\150\164\164\160\072\057\057\167\167\167\056\160\153
\151\056\141\144\155\151\156\056\143\150\057\160\157\154\151\143
\171\057\103\120\123\137\062\137\061\066\137\067\065\066\137\061
\137\061\067\137\063\137\062\061\137\061\056\160\144\146\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035
\006\003\125\035\016\004\026\004\024\052\304\151\012\241\306\125
\306\003\156\160\316\206\201\263\244\017\252\031\333\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\237\176\172\155\273\254\214\216\140\224\145\321\103\120\321
\277\155\152\101\375\022\342\315\306\037\046\146\355\312\235\072
\101\145\170\316\364\002\260\123\372\103\217\344\331\273\256\124
\200\027\045\140\022\111\201\164\350\073\263\333\145\134\051\124
\311\346\105\236\236\224\021\204\124\162\050\317\067\300\365\125
\243\121\053\243\310\120\346\351\014\024\023\320\057\244\001\374

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\106\367\076\057\333\324\364\113\024\370\262\000\035\013\374\120
\027\053\371\360\132\175\154\371\373\243\013\212\300\247\062\010
\175\127\113\050\277\006\236\027\024\102\345\054\346\242\200\026
\116\377\017\235\074\034\370\025\302\122\165\230\324\370\026\211
\320\115\347\050\010\307\225\050\116\346\213\201\111\231\332\047
\075\351\372\171\060\331\154\250\337\253\072\033\020\212\321\166
\344\110\376\071\212\170\210\033\201\146\303\006\144\242\166\005
\312\224\047\264\166\361\332\202\373\265\104\020\143\103\303\243
\306\306\004\307\017\313\361\266\217\347\134\212\246\121\226\311
\337\200\314\265\321\040\263\103\323\024\307\335\261\120\155\225
\172
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "AdminCA-CD-T01"

Issuer: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH

Serial Number: 1 (0x1)

Subject: CN=AdminCA-CD-T01,OU=Certification Authorities,OU=Services,O=admin,C=CH

#

Not Valid Before: Wed Jan 25 13:36:19 2006

Not Valid After: Mon Jan 25 12:36:19 2016

Fingerprint (MD5): 5b:9e:fd:3b:60:35:ea:68:8e:52:fe:13:19:14:4a:a3

Fingerprint (SHA1): 6b:81:44:6a:5c:dd:f4:74:a0:f8:00:ff:be:69:fd:0d:b6:28:75:16

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AdminCA-CD-T01"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\153\201\104\152\134\335\364\164\240\370\000\377\276\151\375\015
\266\050\165\026
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\133\236\375\073\140\065\352\150\216\122\376\023\031\024\112\243
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\027\060\025\006\003\125\004\003\023
\016\101\144\155\151\156\103\101\055\103\104\055\124\060\061
```

END


```

CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Admin-Root-CA"
# Issuer: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch
# Serial Number:3b:f3:81:d0
# Subject: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch
# Not Valid Before: Thu Nov 15 08:51:07 2001
# Not Valid After: Wed Nov 10 07:51:07 2021
# Fingerprint (MD5): f3:7e:3a:13:dc:74:63:06:74:1a:3c:38:32:8c:fb:a9
# Fingerprint (SHA1): 25:3f:77:5b:0e:77:97:ab:64:5f:15:91:55:97:c3:9e:26:36:31:d1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Admin-Root-CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\073\363\201\320
END

```

CKA_VALUE MULTILINE_OCTAL

\060\202\005\125\060\202\004\075\240\003\002\001\002\002\004\073
\363\201\320\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\154\061\013\060\011\006\003\125\004\006\023\002\143
\150\061\016\060\014\006\003\125\004\012\023\005\141\144\155\151
\156\061\021\060\017\006\003\125\004\013\023\010\123\145\162\166
\151\143\145\163\061\042\060\040\006\003\125\004\013\023\031\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\151\145\163\061\026\060\024\006\003\125\004
\003\023\015\101\144\155\151\156\055\122\157\157\164\055\103\101
\060\036\027\015\060\061\061\061\061\065\060\070\065\061\060\067
\132\027\015\062\061\061\061\061\060\060\067\065\061\060\067\132
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101\060\202
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\313
\340\257\104\024\042\376\152\027\111\362\135\235\317\134\002\142
\013\200\271\132\277\250\125\063\173\243\022\044\136\114\157\073
\101\211\116\203\075\237\263\225\046\064\246\314\022\364\314\235
\207\136\075\014\015\027\057\205\046\076\052\046\131\163\241\250
\274\073\353\345\106\270\363\131\173\040\261\136\100\001\155\272
\147\263\153\353\357\305\342\371\065\335\014\152\006\266\232\050
\232\160\263\100\051\166\300\161\106\021\153\103\257\345\126\101
\373\346\034\071\203\115\267\366\242\261\146\311\250\015\262\360
\167\276\066\301\040\047\062\271\314\327\132\312\366\027\101\066
\115\373\273\125\201\143\234\223\136\203\153\177\270\025\167\162
\174\175\115\011\153\131\225\346\355\060\253\104\106\331\025\001
\245\133\211\145\266\340\050\331\050\010\225\176\010\043\262\042
\350\337\045\114\074\150\367\156\347\113\307\220\375\204\101\046
\276\134\203\072\327\043\171\267\032\370\007\031\202\132\151\130
\305\377\210\162\053\307\276\370\323\055\063\167\247\026\022\250
\213\041\306\102\256\172\144\257\362\263\300\355\167\344\151\002
\003\001\000\001\243\202\001\375\060\202\001\371\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\201\231
\006\003\125\035\040\004\201\221\060\201\216\060\201\213\006\010
\140\205\164\001\021\003\001\000\060\177\060\053\006\010\053\006
\001\005\005\007\002\002\060\037\032\035\124\150\151\163\040\151
\163\040\164\150\145\040\101\144\155\151\156\055\122\157\157\164
\055\103\101\040\103\120\123\060\120\006\010\053\006\001\005\005
\007\002\001\026\104\150\164\164\160\072\057\057\167\167\167\056
\151\156\146\157\162\155\141\164\151\153\056\141\144\155\151\156
\056\143\150\057\120\113\111\057\154\151\156\153\163\057\103\120
\123\137\062\137\061\066\137\067\065\066\137\061\137\061\067\137

\063\137\061\137\060\056\160\144\146\060\177\006\003\125\035\037
\004\170\060\166\060\164\240\162\240\160\244\156\060\154\061\026
\060\024\006\003\125\004\003\023\015\101\144\155\151\156\055\122
\157\157\164\055\103\101\061\042\060\040\006\003\125\004\013\023
\031\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\151\145\163\061\021\060\017\006\003
\125\004\013\023\010\123\145\162\166\151\143\145\163\061\016\060
\014\006\003\125\004\012\023\005\141\144\155\151\156\061\013\060
\011\006\003\125\004\006\023\002\143\150\060\035\006\003\125\035
\016\004\026\004\024\202\237\372\043\163\040\361\227\213\262\114
\115\276\102\305\177\146\315\144\350\060\201\231\006\003\125\035
\043\004\201\221\060\201\216\200\024\202\237\372\043\163\040\361
\227\213\262\114\115\276\102\305\177\146\315\144\350\241\160\244
\156\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150
\061\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156
\061\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151
\143\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003
\023\015\101\144\155\151\156\055\122\157\157\164\055\103\101\202
\004\073\363\201\320\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\170\117\172\134\046\021\247
\056\256\232\103\312\134\065\202\106\176\310\066\217\172\146\265
\251\062\010\034\014\344\156\241\361\310\301\324\344\200\347\214
\275\143\261\014\337\362\271\076\302\013\161\100\151\106\243\154
\364\133\017\015\041\104\307\052\053\075\032\013\300\240\301\314
\210\312\034\077\254\122\266\366\147\315\114\155\304\276\043\375
\101\053\004\156\167\245\026\170\351\233\134\043\317\201\032\006
\041\143\152\334\051\121\262\072\371\233\367\135\261\055\365\004
\027\006\177\234\350\067\205\055\356\061\274\056\001\370\304\353
\153\216\064\305\071\071\366\224\230\273\037\016\036\021\057\250
\214\007\012\110\242\214\152\231\205\064\267\052\141\205\170\032
\051\151\037\235\045\120\121\004\312\027\303\071\070\007\161\347
\321\230\233\325\321\030\025\226\274\342\363\311\147\053\361\011
\262\316\234\364\103\046\001\372\127\153\220\251\261\276\350\065
\325\151\377\360\071\025\116\274\137\360\317\073\364\276\043\077
\105\146\304\264\226\135\276\217\015\336\307\155\011\102\363\211
\371\361\077\365\164\117\337\270\145

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Admin-Root-CA"

Issuer: CN=Admin-Root-CA,OU=Certification

```
Authorities,OU=Services,O=admin,C=ch
# Serial Number:3b:f3:81:d0
# Subject: CN=Admin-Root-CA,OU=Certification Authorities,OU=Services,O=admin,C=ch
# Not Valid Before: Thu Nov 15 08:51:07 2001
# Not Valid After: Wed Nov 10 07:51:07 2021
# Fingerprint (MD5): f3:7e:3a:13:dc:74:63:06:74:1a:3c:38:32:8c:fb:a9
# Fingerprint (SHA1): 25:3f:77:5b:0e:77:97:ab:64:5f:15:91:55:97:c3:9e:26:36:31:d1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Admin-Root-CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\045\077\167\133\016\167\227\253\144\137\025\221\125\227\303\236
\046\066\061\321
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\363\176\072\023\334\164\143\006\164\032\074\070\062\214\373\251
END
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\016\060\014\006\003\125\004\012\023\005\141\144\155\151\156\061
\021\060\017\006\003\125\004\013\023\010\123\145\162\166\151\143
\145\163\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\026\060\024\006\003\125\004\003\023
\015\101\144\155\151\156\055\122\157\157\164\055\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\073\363\201\320
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"
# Issuer: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon
Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik
Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR
# Serial Number: 17 (0x11)
# Subject: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu
Sertifikasyon Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve
Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR
# Not Valid Before: Fri Aug 24 11:37:07 2007
# Not Valid After: Mon Aug 21 11:37:07 2017
```

```
# Fingerprint (MD5): ed:41:f5:8c:50:c5:2b:9c:73:e6:ee:6c:eb:c2:a8:26
# Fingerprint (SHA1): 1b:4b:39:61:26:27:6b:64:91:a2:68:6d:d7:02:43:21:2d:1f:1d:96
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153
\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153
\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303
```

\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\021
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\027\060\202\003\377\240\003\002\001\002\002\001\021
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006\003
\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102\151
\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154
\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155\141
\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304\260
\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125\154
\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153\040
\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101\162
\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151\164
\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043\060
\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145\162
\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145
\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303\234
\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303\266
\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172\155
\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261\163
\304\261\040\055\040\123\303\274\162\303\274\155\040\063\060\036
\027\015\060\067\060\070\062\064\061\061\063\067\060\067\132\027
\015\061\067\060\070\062\061\061\061\063\067\060\067\132\060\202
\001\053\061\013\060\011\006\003\125\004\006\023\002\124\122\061
\030\060\026\006\003\125\004\007\014\017\107\145\142\172\145\040
\055\040\113\157\143\141\145\154\151\061\107\060\105\006\003\125
\004\012\014\076\124\303\274\162\153\151\171\145\040\102\151\154
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\305\237\164\304\261\162\155\141\040
\113\165\162\165\155\165\040\055\040\124\303\234\102\304\260\124
\101\113\061\110\060\106\006\003\125\004\013\014\077\125\154\165
\163\141\154\040\105\154\145\153\164\162\157\156\151\153\040\166
\145\040\113\162\151\160\164\157\154\157\152\151\040\101\162\141
\305\237\164\304\261\162\155\141\040\105\156\163\164\151\164\303
\274\163\303\274\040\055\040\125\105\113\101\105\061\043\060\041
\006\003\125\004\013\014\032\113\141\155\165\040\123\145\162\164
\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145\172
\151\061\112\060\110\006\003\125\004\003\014\101\124\303\234\102
\304\260\124\101\113\040\125\105\113\101\105\040\113\303\266\153

\040\123\145\162\164\151\146\151\153\141\040\110\151\172\155\145
\164\040\123\141\304\237\154\141\171\304\261\143\304\261\163\304
\261\040\055\040\123\303\274\162\303\274\155\040\063\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\212\155
\113\377\020\210\072\303\366\176\224\350\352\040\144\160\256\041
\201\276\072\173\074\333\361\035\122\177\131\372\363\042\114\225
\240\220\274\110\116\021\253\373\267\265\215\172\203\050\214\046
\106\330\116\225\100\207\141\237\305\236\155\201\207\127\154\212
\073\264\146\352\314\100\374\343\252\154\262\313\001\333\062\277
\322\353\205\317\241\015\125\303\133\070\127\160\270\165\306\171
\321\024\060\355\033\130\133\153\357\065\362\241\041\116\305\316
\174\231\137\154\271\270\042\223\120\247\315\114\160\152\276\152
\005\177\023\234\053\036\352\376\107\316\004\245\157\254\223\056
\174\053\237\236\171\023\221\350\352\236\312\070\165\216\142\260
\225\223\052\345\337\351\136\227\156\040\137\137\204\172\104\071
\031\100\034\272\125\053\373\060\262\201\357\204\343\334\354\230
\070\071\003\205\010\251\124\003\005\051\360\311\217\213\352\013
\206\145\031\021\323\351\011\043\336\150\223\003\311\066\034\041
\156\316\214\146\361\231\060\330\327\263\303\035\370\201\056\250
\275\202\013\146\376\202\313\341\340\032\202\303\100\201\002\003
\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026
\004\024\275\210\207\311\217\366\244\012\013\252\353\305\376\221
\043\235\253\112\212\062\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\003\202\001\001\000\035\174\372\111\217
\064\351\267\046\222\026\232\005\164\347\113\320\155\071\154\303
\046\366\316\270\061\274\304\337\274\052\370\067\221\030\334\004
\310\144\231\053\030\155\200\003\131\311\256\370\130\320\076\355
\303\043\237\151\074\206\070\034\236\357\332\047\170\321\204\067
\161\212\074\113\071\317\176\105\006\326\055\330\212\115\170\022
\326\255\302\323\313\322\320\101\363\046\066\112\233\225\154\014
\356\345\321\103\047\146\301\210\367\172\263\040\154\352\260\151
\053\307\040\350\014\003\304\101\005\231\342\077\344\153\370\240
\206\201\307\204\306\037\325\113\201\022\262\026\041\054\023\241
\200\262\136\014\112\023\236\040\330\142\100\253\220\352\144\112
\057\254\015\001\022\171\105\250\057\207\031\150\310\342\205\307
\060\262\165\371\070\077\262\300\223\264\153\342\003\104\316\147
\240\337\211\326\255\214\166\243\023\303\224\141\053\153\331\154
\301\007\012\042\007\205\154\205\044\106\251\276\077\213\170\204
\202\176\044\014\235\375\201\067\343\045\250\355\066\116\225\054
\311\234\220\332\354\251\102\074\255\266\002

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"
# Issuer: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon
Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma
Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR
# Serial Number: 17 (0x11)
# Subject: CN=TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3,OU=Kamu Sertifikasyon
Merkezi,OU=Ulusal Elektronik ve Kriptoloji Aratırma Enstitüsü - UEKAE,O=Türkiye Bilimsel ve Teknolojik
Aratırma Kurumu - TÜBTAK,L=Gebze - Kocaeli,C=TR
# Not Valid Before: Fri Aug 24 11:37:07 2007
# Not Valid After: Mon Aug 21 11:37:07 2017
# Fingerprint (MD5): ed:41:f5:8c:50:c5:2b:9c:73:e6:ee:6c:eb:c2:a8:26
# Fingerprint (SHA1): 1b:4b:39:61:26:27:6b:64:91:a2:68:6d:d7:02:43:21:2d:1f:1d:96
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TÜBTAK UEKAE Kök Sertifika Hizmet Salaycs - Sürüm 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\033\113\071\141\046\047\153\144\221\242\150\155\327\002\103\041
\055\037\035\226
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\355\101\365\214\120\305\053\234\163\346\356\154\353\302\250\046
END
CKA_ISSUER
MULTILINE_OCTAL
\060\202\001\053\061\013\060\011\006\003\125\004\006\023\002\124
\122\061\030\060\026\006\003\125\004\007\014\017\107\145\142\172
\145\040\055\040\113\157\143\141\145\154\151\061\107\060\105\006
\003\125\004\012\014\076\124\303\274\162\153\151\171\145\040\102
\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157
\154\157\152\151\153\040\101\162\141\305\237\164\304\261\162\155
\141\040\113\165\162\165\155\165\040\055\040\124\303\234\102\304
\260\124\101\113\061\110\060\106\006\003\125\004\013\014\077\125
\154\165\163\141\154\040\105\154\145\153\164\162\157\156\151\153
\040\166\145\040\113\162\151\160\164\157\154\157\152\151\040\101
\162\141\305\237\164\304\261\162\155\141\040\105\156\163\164\151
\164\303\274\163\303\274\040\055\040\125\105\113\101\105\061\043
\060\041\006\003\125\004\013\014\032\113\141\155\165\040\123\145
\162\164\151\146\151\153\141\163\171\157\156\040\115\145\162\153
\145\172\151\061\112\060\110\006\003\125\004\003\014\101\124\303
\234\102\304\260\124\101\113\040\125\105\113\101\105\040\113\303
\266\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261
\163\304\261\040\055\040\123\303\274\162\303\274\155\040\063
END
```



```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\021
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Halcom CA FO"
# Issuer: CN=Halcom CA FO,O=Halcom,C=SI
# Serial Number: 113253 (0x1ba65)
# Subject: CN=Halcom CA FO,O=Halcom,C=SI
# Not Valid Before: Sun Jun 05 10:33:31 2005
# Not Valid After: Fri Jun 05 10:33:31 2020
# Fingerprint (MD5): 0b:09:2c:1c:d7:21:86:6f:94:37:6f:e6:a7:f3:22:4d
# Fingerprint (SHA1): 04:09:56:5b:77:da:58:2e:64:95:ac:00:60:a7:23:54:e6:4b:01:92
```

```
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom CA FO"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117
```

```
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\272\145
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\032\060\202\002\002\240\003\002\001\002\002\003\001
\272\145\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157
\155\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143
\157\155\040\103\101\040\106\117\060\036\027\015\060\065\060\066
```

\060\065\061\060\063\063\063\061\132\027\015\062\060\060\066\060
\065\061\060\063\063\063\061\132\060\065\061\013\060\011\006\003
\125\004\006\023\002\123\111\061\017\060\015\006\003\125\004\012
\023\006\110\141\154\143\157\155\061\025\060\023\006\003\125\004
\003\023\014\110\141\154\143\157\155\040\103\101\040\106\117\060
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000
\274\243\046\001\226\345\235\254\032\002\002\071\174\254\334\006
\114\067\112\256\007\110\165\350\047\034\244\061\375\012\247\043
\135\174\077\016\372\360\214\221\157\125\064\204\003\164\314\003
\065\170\315\161\301\107\033\273\352\041\156\270\007\336\041\222
\252\254\271\336\067\242\037\364\232\034\033\310\356\020\203\326
\123\103\310\335\351\363\220\106\071\162\012\116\374\022\051\111
\201\130\046\072\161\023\014\173\123\217\337\146\162\074\027\334
\336\341\171\112\237\351\140\076\155\065\344\115\121\321\034\300
\032\060\134\006\077\163\103\310\315\066\364\036\302\207\214\117
\110\237\332\165\127\052\114\257\215\124\074\104\137\230\074\120
\332\320\030\006\174\140\156\322\204\377\147\205\220\075\136\306
\353\330\172\243\265\155\014\276\165\270\251\332\126\161\066\132
\356\353\111\123\076\342\031\166\174\102\253\241\220\361\367\057
\270\272\112\101\264\053\244\056\141\066\347\326\332\177\365\237
\215\270\113\133\204\065\120\305\275\005\252\252\302\014\164\101
\143\127\031\216\377\341\106\346\173\005\044\376\231\335\061\275
\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125\035
\016\004\012\004\010\110\040\034\142\015\130\122\045\060\013\006
\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\133\165
\365\346\060\106\130\212\367\017\321\117\013\001\130\004\271\144
\344\060\015\076\166\331\153\023\255\034\156\311\114\360\154\346
\102\021\375\353\203\357\120\330\273\124\235\264\221\212\132\265
\204\017\214\106\315\074\202\250\245\036\040\234\320\365\101\006
\312\001\053\230\260\352\051\120\037\342\164\173\131\202\312\012
\345\156\116\256\260\067\355\076\314\272\062\331\077\013\150\054
\262\323\074\334\070\305\021\326\033\063\356\271\242\152\104\223
\033\120\352\141\033\171\127\121\126\236\062\320\063\170\264\317
\107\052\373\367\315\361\347\155\340\272\144\373\025\233\276\312
\261\362\107\001\177\340\114\267\245\101\254\036\331\032\154\221
\341\320\250\112\303\136\170\053\172\200\300\117\315\045\137\120
\047\306\274\130\165\234\035\265\232\135\225\163\363\204\146\323
\315\155\035\315\340\132\316\040\070\357\222\163\170\136\002\326
\215\371\164\324\267\211\330\214\373\173\325\213\161\325\031\027
\046\330\044\111\074\125\274\202\207\332\143\273\071\327\216\221
\317\064\160\134\163\117\320\120\107\132\373\345\132\121

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Halcom CA FO"

Issuer: CN=Halcom CA FO,O=Halcom,C=SI

Serial Number: 113253 (0x1ba65)

Subject: CN=Halcom CA FO,O=Halcom,C=SI

Not Valid Before: Sun Jun 05 10:33:31 2005

Not Valid After: Fri Jun 05 10:33:31 2020

Fingerprint (MD5): 0b:09:2c:1c:d7:21:86:6f:94:37:6f:e6:a7:f3:22:4d

Fingerprint (SHA1): 04:09:56:5b:77:da:58:2e:64:95:ac:00:60:a7:23:54:e6:4b:01:92

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Halcom CA FO"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\004\011\126\133\167\332\130\056\144\225\254\000\140\247\043\124
\346\113\001\222

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\013\011\054\034\327\041\206\157\224\067\157\346\247\363\042\115

END

CKA_ISSUER

MULTILINE_OCTAL

\060\065\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\025\060\023\006\003\125\004\003\023\014\110\141\154\143\157
\155\040\103\101\040\106\117

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\001\272\145

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Halcom CA PO 2"

Issuer: CN=Halcom CA PO 2,O=Halcom,C=SI

Serial Number: 79074 (0x134e2)

Subject: CN=Halcom CA PO 2,O=Halcom,C=SI

Not Valid Before: Sat Feb 07 18:33:31 2004

Not Valid After: Thu Feb 07 18:33:31 2019

Fingerprint (MD5): 1d:64:96:af:2d:82:1a:30:0b:a0:62:0d:76:bc:53:aa

Fingerprint (SHA1): 7f:bb:6a:cd:7e:0a:b4:38:da:af:6f:d5:02:10:d0:07:c6:c0:82:9c

CKA_CLASS

```
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom CA PO 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\103\101\040\120\117\040\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\103\101\040\120\117\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\001\064\342
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\031\060\202\001\202\240\003\002\001\002\002\003\001
\064\342\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157
\155\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143
\157\155\040\103\101\040\120\117\040\062\060\036\027\015\060\064
\060\062\060\067\061\070\063\063\063\061\132\027\015\061\071\060
\062\060\067\061\070\063\063\063\061\132\060\067\061\013\060\011
\006\003\125\004\006\023\002\123\111\061\017\060\015\006\003\125
\004\012\023\006\110\141\154\143\157\155\061\027\060\025\006\003
\125\004\003\023\016\110\141\154\143\157\155\040\103\101\040\120
\117\040\062\060\201\237\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\201\215\000\060\201\211\002\201\201\000
\224\027\362\111\067\060\062\011\010\074\276\365\067\267\164\154
\020\073\313\042\161\007\006\271\306\354\332\110\363\237\047\155
\144\215\125\336\171\107\120\373\150\316\171\001\276\247\033\366
\141\255\175\061\013\123\040\255\061\361\133\316\043\372\377\314
\022\002\132\000\234\374\315\153\022\122\350\254\324\063\073\163
\046\020\161\220\100\277\003\210\337\274\137\041\015\214\326\212
\223\037\347\256\025\124\306\114\344\231\141\222\340\367\215\162
\307\334\142\023\063\243\076\111\051\373\204\277\160\072\221\041
\002\003\001\000\001\243\063\060\061\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\021\006\003\125\035
\016\004\012\004\010\110\257\127\146\277\322\300\002\060\013\006
\003\125\035\017\004\004\003\002\001\006\060\015\006\011\052\206
```

```
\110\206\367\015\001\001\005\005\000\003\201\201\000\220\026\127
\166\270\171\316\374\304\321\067\000\242\315\377\070\007\021\163
\023\005\111\355\337\301\305\316\306\100\330\367\002\226\015\267
\157\021\204\070\146\373\161\367\020\001\147\174\135\175\044\332
\366\144\073\010\200\110\246\116\275\104\342\260\007\062\217\174
\206\067\106\157\300\203\003\223\265\364\363\022\174\243\350\313
\342\072\043\170\372\150\157\376\130\312\014\247\127\121\055\142
\220\371\344\250\334\365\312\337\016\207\121\156\067\165\046\016
\327\176\170\212\003\242\225\031\266\136\221\001\126
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Halcom CA PO 2"

Issuer: CN=Halcom CA PO 2,O=Halcom,C=SI

Serial Number: 79074 (0x134e2)

Subject: CN=Halcom CA PO 2,O=Halcom,C=SI

Not Valid Before: Sat Feb 07 18:33:31 2004

Not Valid After: Thu Feb 07 18:33:31 2019

Fingerprint (MD5): 1d:64:96:af:2d:82:1a:30:0b:a0:62:0d:76:bc:53:aa

Fingerprint (SHA1): 7f:bb:6a:cd:7e:0a:b4:38:da:af:6f:d5:02:10:d0:07:c6:c0:82:9c

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Halcom CA PO 2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\177\273\152\315\176\012\264\070\332\257\157\325\002\020\320\007
\306\300\202\234
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\035\144\226\257\055\202\032\060\013\240\142\015\166\274\123\252
```

END

CKA_ISSUER

MULTILINE_OCTAL

```
\060\067\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\017\060\015\006\003\125\004\012\023\006\110\141\154\143\157\155
\061\027\060\025\006\003\125\004\003\023\016\110\141\154\143\157
\155\040\103\101\040\120\117\040\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\003\001\064\342
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Certificate "ACNLB"
# Issuer: O=ACNLB,C=SI
# Serial Number:3e:c3:86:8e
# Subject: O=ACNLB,C=SI
# Not Valid Before: Thu May 15 11:52:45 2003
# Not Valid After: Mon May 15 12:22:45 2023
# Fingerprint (MD5): ba:92:64:42:16:1f:cb:a1:16:48:1a:f6:40:5c:59:87
# Fingerprint (SHA1): 04:56:f2:3d:1e:9c:43:ae:cb:0d:80:7f:1c:06:47:55:1a:05:f4:56
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACNLB"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\076\303\206\216
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\267\060\202\002\237\240\003\002\001\002\002\004\076
\303\206\216\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\035\061\013\060\011\006\003\125\004\006\023\002\123
\111\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114
\102\060\036\027\015\060\063\060\065\061\065\061\061\065\062\064
\065\132\027\015\062\063\060\065\061\065\061\062\062\062\064\065
\132\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\277\166\165\075\014\174\100\072\146\137\115\214\373\335\074
\056\376\175\224\144\355\112\324\111\110\241\356\221\161\262\171
\310\216\053\037\252\360\062\264\050\262\243\302\165\117\244\351
\246\032\366\242\146\141\043\047\141\054\156\027\220\013\372\336
\036\161\122\002\051\004\231\171\254\300\260\300\146\230\230\021
\067\144\020\317\234\274\073\102\034\051\134\125\220\366\172\042
```

\116\126\257\067\150\277\164\072\154\074\306\230\314\140\041\277
\342\010\047\344\331\053\274\343\204\225\327\324\044\140\374\176
\055\057\235\041\353\235\221\306\273\244\321\353\311\022\255\243
\350\310\265\177\125\113\353\231\002\124\304\201\034\014\256\071
\344\152\172\005\330\116\160\240\372\003\167\263\256\330\270\024
\222\373\101\167\023\065\152\267\242\312\210\113\255\055\121\274
\166\232\154\273\100\275\347\044\114\042\246\346\375\116\010\173
\235\013\020\326\022\322\246\306\241\144\062\364\001\163\226\201
\342\110\260\301\050\143\075\073\347\147\254\156\305\024\365\027
\023\242\234\037\053\127\360\025\047\165\135\335\261\064\326\223
\021\002\003\001\000\001\243\201\376\060\201\373\060\021\006\011
\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060
\244\056\060\054\061\013\060\011\006\003\125\004\006\023\002\123
\111\061\016\060\014\006\003\125\004\012\023\005\101\103\116\114
\102\061\015\060\013\006\003\125\004\003\023\004\103\122\114\061
\060\053\006\003\125\035\020\004\044\060\042\200\017\062\060\060
\063\060\065\061\065\061\061\065\062\064\065\132\201\017\062\060
\062\063\060\065\061\065\061\062\062\062\064\065\132\060\013\006
\003\125\035\017\004\004\003\002\001\006\060\037\006\003\125\035
\043\004\030\060\026\200\024\314\273\273\206\326\157\370\276\264
\107\042\167\263\266\255\327\001\131\226\115\060\035\006\003\125
\035\016\004\026\004\024\314\273\273\206\326\157\370\276\264\107
\042\167\263\266\255\327\001\131\226\115\060\014\006\003\125\035
\023\004\005\060\003\001\001\377\060\035\006\011\052\206\110\206
\366\175\007\101\000\004\020\060\016\033\010\126\066\056\060\072
\064\056\060\003\002\004\220\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\003\202\001\001\000\021\147\313\313\232
\153\040\041\335\157\151\203\325\077\015\272\223\025\227\116\160
\166\046\134\350\236\044\347\067\376\074\120\364\324\371\052\057
\014\023\241\135\004\274\320\260\351\302\003\027\205\005\141\075
\300\247\252\166\114\303\270\072\203\251\206\317\003\371\167\016
\053\262\075\166\033\145\321\152\161\140\161\333\273\270\172\216
\362\371\041\203\370\127\114\250\307\335\145\306\356\357\157\263
\266\231\273\264\303\320\253\137\262\240\176\335\164\041\054\303
\132\353\215\241\312\330\360\310\027\355\166\272\204\143\156\133
\271\265\312\155\327\374\064\071\200\057\272\117\337\215\330\374
\030\304\074\212\065\057\167\202\226\255\040\222\030\262\347\066
\364\256\062\164\270\107\321\330\017\330\054\313\152\302\000\165
\371\054\370\102\016\313\376\163\223\251\217\341\307\256\041\067
\363\312\271\014\264\347\211\176\161\034\126\064\040\303\361\064
\271\125\113\323\123\122\361\007\055\053\076\133\031\100\237\020
\355\323\051\063\305\257\017\020\126\207\332\073\310\261\355\070
\331\031\373\113\360\120\055\244\315\324\130

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "ACNLB"
# Issuer: O=ACNLB,C=SI
# Serial Number:3e:c3:86:8e
# Subject: O=ACNLB,C=SI
# Not Valid Before: Thu May 15 11:52:45 2003
# Not Valid After: Mon May 15 12:22:45 2023
# Fingerprint (MD5): ba:92:64:42:16:1f:cb:a1:16:48:1a:f6:40:5c:59:87
# Fingerprint (SHA1): 04:56:f2:3d:1e:9c:43:ae:cb:0d:80:7f:1c:06:47:55:1a:05:f4:56
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACNLB"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\004\126\362\075\036\234\103\256\313\015\200\177\034\006\107\125
\032\005\364\126
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\272\222\144\102\026\037\313\241\026\110\032\366\100\134\131\207
END
CKA_ISSUER MULTILINE_OCTAL
\060\035\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\016\060\014\006\003\125\004\012\023\005\101\103\116\114\102
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\076\303\206\216
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "state-institutions"
# Issuer: OU=sigen-ca,O=state-institutions,C=si
# Serial Number:3b:3c:f9:c9
# Subject: OU=sigen-ca,O=state-institutions,C=si
# Not Valid Before: Fri Jun 29 21:27:46
2001
# Not Valid After: Tue Jun 29 21:57:46 2021
# Fingerprint (MD5): 49:ef:a6:a1:f0:de:8e:a7:6a:ee:5b:7d:1e:5f:c4:46
# Fingerprint (SHA1): 3e:42:a1:87:06:bd:0c:9c:cf:59:47:50:d2:e4:d6:ab:00:48:fd:c4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```



```
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "state-institutions"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\073\074\371\311
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\031\060\202\003\001\240\003\002\001\002\002\004\073
\074\371\311\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\075\061\013\060\011\006\003\125\004\006\023\002\163
\151\061\033\060\031\006\003\125\004\012\023\022\163\164\141\164
\145\055\151\156\163\164\151\164\165\164\151\157\156\163\061\021
\060\017\006\003\125\004\013\023\010\163\151\147\145\156\055\143
\141\060\036\027\015\060\061\060\066\062\071\062\061\062\067\064
\066\132\027\015\062\061\060\066\062\071\062\061\065\067\064\066
\132\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151
\061\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145
\055\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060
\017\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\260\345\145\262\300\254\144\226\362\210\033\263\355\236\344
\002\306\117\053\210\316\056\212\121\200\165\257\020\133\362\313
\070\146\233\242\016\155\064\107\226\245\222\021\257\366\065\107
\242\167\042\014\316\026\210\142\252\323\111\156\030\274\056\104
\330\276\306\236\302\032\031\254\101\216\374\060\007\002\362\306
\152\324\133\043\000\357\101\064\330\244\163\143\337\042\222\063
\204\001\245\215\363\203\134\372\270\324\172\065\337\354\370\155
\017\340\114\355\255\234\072\175\206\326\245\010\224\276\175\172
\021\037\376\205\077\124\132\210\143\207\234\245\261\247\116\315
\267\104\163\257\317\212\111\153\037\343\315\327\111\115\132\053
\027\346\134\166\263\273\162\271\157\047\322\233\211\025\210\337
\020\137\166\041\001\152\307\025\061\012\321\234\130\370\050\026
```

\005\155\331\116\331\241\327\007\040\313\113\046\211\115\222\262
\247\272\226\350\343\130\217\042\234\001\226\132\304\367\061\115
\013\111\265\341\170\141\342\124\030\006\273\236\124\064\176\014
\076\353\356\265\200\037\335\026\204\035\150\070\146\147\163\370
\221\002\003\001\000\001\243\202\001\037\060\202\001\033\060\021
\006\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000
\007\060\137\006\003\125\035\037\004\130\060\126\060\124\240\122
\240\120\244\116\060\114\061\013\060\011\006\003\125\004\006\023
\002\163\151\061\033\060\031\006\003\125\004\012\023\022\163\164
\141\164\145\055\151\156\163\164\151\164\165\164\151\157\156\163
\061\021\060\017\006\003\125\004\013\023\010\163\151\147\145\156
\055\143\141\061\015\060\013\006\003\125\004\003\023\004\103\122
\114\061\060\053\006\003\125\035\020\004\044\060\042\200\017\062
\060\060\061\060\066\062\071\062\061\062\067\064\066\132\201\017
\062\060\062\061\060\066\062\071\062\061\065\067\064\066\132\060
\013\006\003\125\035\017\004\004\003\002\001\006\060\037\006\003
\125\035\043\004\030\060\026\200\024\161\173\212\006\037\061\005
\125\253\140\022\167\107\040\036\003\210\030\354\211\060\035\006
\003\125\035\016\004\026\004\024\161\173\212\006\037\061\005\125
\253\140\022\167\107\040\036\003\210\030\354\211\060\014\006\003
\125\035\023\004\005\060\003\001\001\377\060\035\006\011\052\206
\110\206\366\175\007\101\000\004\020\060\016\033\010\126\065\056
\060\072\064\056\060\003\002\004\220\060\015\006\011\052\206\110
\206\367\015\001\001\005\005\000\003\202\001\001\000\000\272\143
\064\363\030\030\356\256\176\215\222\307\065\365\302\023\324\326
\000\252\041\062\026\326\320\133\372\051\260\215\372\027\167\222
\371\245\266\366\371\207\077\006\017\040\356\142\075\064\367\251
\057\307\251\073\320\047\210\114\254\335\311\251\345\132\130\205
\327\022\065\075\334\260\202\133\162\364\273\163\267\373\376\070
\041\230\004\200\262\210\142\017\036\254\072\026\251\346\263\012
\366\025\020\105\003\243\227\342\315\254\020\334\371\000\036\277
\163\154\103\354\167\042\026\006\057\226\203\211\173\260\270\123
\104\101\010\334\200\037\005\333\031\011\166\207\276\065\235\116
\041\113\264\223\301\150\072\235\137\066\376\241\256\060\054\113
\336\170\044\072\130\326\026\103\357\235\231\070\213\052\230\376
\060\321\302\352\326\257\045\325\245\166\013\271\357\100\071\056
\366\353\337\062\136\035\175\207\265\104\314\002\071\322\046\225
\162\330\157\205\103\250\217\016\243\106\316\327\316\350\271\126
\251\370\211\027\022\037\103\111\006\172\062\347\077\276\157\171
\276\326\063\327\114\074\050\374\022\361\166\166\030

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "state-institutions"

```

# Issuer: OU=sigen-ca,O=state-institutions,C=si
# Serial Number:3b:3c:f9:c9
# Subject: OU=sigen-ca,O=state-institutions,C=si
# Not Valid Before: Fri Jun 29 21:27:46 2001
# Not Valid After: Tue Jun 29 21:57:46 2021
# Fingerprint (MD5): 49:ef:a6:a1:f0:de:8e:a7:6a:ee:5b:7d:1e:5f:c4:46
# Fingerprint (SHA1): 3e:42:a1:87:06:bd:0c:9c:cf:59:47:50:d2:e4:d6:ab:00:48:fd:c4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "state-institutions"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\076\102\241\207\006\275\014\234\317\131\107\120\322\344\326\253
\000\110\375\304
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\111\357\246\241\360\336\216\247\152\356\133\175\036\137\304\106
END
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\163\151\061
\033\060\031\006\003\125\004\012\023\022\163\164\141\164\145\055
\151\156\163\164\151\164\165\164\151\157\156\163\061\021\060\017
\006\003\125\004\013\023\010\163\151\147\145\156\055\143\141
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\074\371\311
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SECOM Trust
Systems CO.,LTD."
# Issuer: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP
# Not Valid Before: Wed Jun 06 02:12:32 2007
# Not Valid After: Sat Jun 06 02:12:32 2037
# Fingerprint (MD5): 22:2d:a6:01:ea:7c:0a:f7:f0:6c:56:43:3f:77:76:d3
# Fingerprint (SHA1): fe:b8:c4:32:dc:f9:76:9a:ce:ae:3d:d8:90:8f:fd:28:86:65:64:7d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "SECOM Trust Systems CO.,LTD."
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103
\101\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\175\060\202\002\145\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045
\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124
\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056
\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023\041
\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151
\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103\101
\061\060\036\027\015\060\067\060\066\060\066\060\062\061\062\063
\062\132\027\015\063\067\060\066\060\066\060\062\061\062\063\062
\132\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120
\061\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115
\040\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103
\117\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013
\023\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165
\156\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164
\103\101\061\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\274\177\354\127\233\044\340\376\234\272\102\171
\251\210\212\372\200\340\365\007\051\103\352\216\012\064\066\215
\034\372\247\265\071\170\377\227\165\367\057\344\252\153\004\204
\104\312\246\342\150\216\375\125\120\142\017\244\161\016\316\007
```

\070\055\102\205\120\255\074\226\157\213\325\242\016\317\336\111
\211\075\326\144\056\070\345\036\154\265\127\212\236\357\110\016
\315\172\151\026\207\104\265\220\344\006\235\256\241\004\227\130
\171\357\040\112\202\153\214\042\277\354\037\017\351\204\161\355
\361\016\344\270\030\023\314\126\066\135\321\232\036\121\153\071
\156\140\166\210\064\013\363\263\321\260\235\312\141\342\144\035
\301\106\007\270\143\335\036\063\145\263\216\011\125\122\075\265
\275\377\007\353\255\141\125\030\054\251\151\230\112\252\100\305
\063\024\145\164\000\371\221\336\257\003\110\305\100\124\334\017
\204\220\150\040\305\222\226\334\056\345\002\105\252\300\137\124
\370\155\352\111\317\135\154\113\257\357\232\302\126\134\306\065
\126\102\152\060\137\302\253\366\342\075\077\263\311\021\217\061
\114\327\237\111\002\003\001\000\001\243\102\060\100\060\035\006
\003\125\035\016\004\026\004\024\065\112\365\115\257\077\327\202
\070\254\253\161\145\027\165\214\235\125\223\346\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\250\207\351\354\370\100\147\135\303\301\146\307\100\113\227
\374\207\023\220\132\304\357\240\312\137\213\267\247\267\361\326
\265\144\267\212\263\270\033\314\332\373\254\146\210\101\316\350
\374\344\333\036\210\246\355\047\120\033\002\060\044\106\171\376
\004\207\160\227\100\163\321\300\301\127\031\232\151\245\047\231
\253\235\142\204\366\121\301\054\311\043\025\330\050\267\253\045
\023\265\106\341\206\002\377\046\214\304\210\222\035\126\376\031
\147\362\125\344\200\243\153\234\253\167\341\121\161\015\040\333
\020\232\333\275\166\171\007\167\231\050\255\232\136\332\261\117
\104\054\065\216\245\226\307\375\203\360\130\306\171\326\230\174
\250\215\376\206\076\007\026\222\341\173\347\035\354\063\166\176
\102\056\112\205\371\221\211\150\204\003\201\245\233\232\276\343
\067\305\124\253\126\073\030\055\101\244\014\370\102\333\231\240
\340\162\157\273\135\341\026\117\123\012\144\371\116\364\277\116
\124\275\170\154\210\352\277\234\023\044\302\160\151\242\177\017
\310\074\255\010\311\260\230\100\243\052\347\210\203\355\167\217
\164

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SECOM Trust Systems CO.,LTD."

Issuer: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

Serial Number: 0 (0x0)

Subject: OU=Security Communication EV RootCA1,O=SECOM Trust Systems CO.,LTD.,C=JP

Not Valid Before: Wed Jun 06 02:12:32 2007

Not Valid After: Sat Jun 06 02:12:32 2037

```

# Fingerprint (MD5): 22:2d:a6:01:ea:7c:0a:f7:f0:6c:56:43:3f:77:76:d3
# Fingerprint (SHA1): fe:b8:c4:32:dc:f9:76:9a:ce:ae:3d:d8:90:8f:fd:28:86:65:64:7d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SECOM Trust Systems CO.,LTD."
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\376\270\304\062\334\371\166\232\316\256\075\330\220\217\375\050
\206\145\144\175
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\042\055\246\001\352\174\012\367\360\154\126\103\077\167\166\323
END
CKA_ISSUER MULTILINE_OCTAL
\060\140\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117
\056\054\114\124\104\056\061\052\060\050\006\003\125\004\013\023
\041\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\105\126\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "D-TRUST Root Class 2 CA 2007"
# Issuer: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE
# Serial Number: 200341 (0x30e95)
# Subject: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE
# Not Valid Before: Wed May 16 05:20:47 2007
# Not Valid After: Mon May 16 05:20:47 2022
# Fingerprint (MD5): 2c:c2:b0:d5:d6:22:c5:2e:90:1e:f4:63:3f:0f:bb:32
# Fingerprint (SHA1): 4a:05:8f:df:d7:61:db:21:b0:c2:ee:48:57:9b:e2:7f:42:a4:da:1c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 2 CA 2007"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA_SUBJECT MULTILINE_OCTAL

\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\062\040\103\101\040\062\060\060\067

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\062\040\103\101\040\062\060\060\067

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\003\016\225

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\225\060\202\003\175\240\003\002\001\002\002\003\003
\016\225\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003
\014\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\154\141\163\163\040\062\040\103\101\040\062\060\060\067\060\036
\027\015\060\067\060\065\061\066\060\065\062\060\064\067\132\027
\015\062\062\060\065\061\066\060\065\062\060\064\067\132\060\113
\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060
\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040
\107\155\142\110\061\045\060\043\006\003\125\004\003\014\034\104
\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163
\163\040\062\040\103\101\040\062\060\060\067\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\263\315\344\204
\025\111\370\344\326\316\204\263\232\255\366\060\165\220\015\204
\353\356\332\263\172\165\052\342\073\244\352\060\054\353\075\167
\215\201\204\150\112\246\244\150\334\220\163\141\064\145\007\035
\043\245\014\346\277\323\335\063\135\332\062\355\246\015\123\246
\164\152\134\031\131\246\114\265\057\171\001\136\236\177\112\372
\272\311\047\176\324\377\315\000\131\040\353\006\314\263\104\317
\326\205\351\355\073\014\154\301\352\214\134\340\271\251\002\360
\023\000\047\223\234\120\376\315\023\117\155\033\152\252\335\017
\377\106\045\031\334\341\136\120\254\032\177\016\313\332\356\040
\374\303\364\234\112\170\065\156\356\061\307\105\026\162\205\322
\202\040\333\122\105\174\074\277\131\127\371\207\164\126\230\133
\035\120\216\314\057\263\263\077\213\356\354\067\111\001\210\357

\330\041\014\223\323\366\156\211\117\272\027\313\104\201\267\173
\247\043\273\164\012\323\330\352\067\105\047\377\334\360\236\103
\343\272\173\212\033\232\175\351\206\240\376\057\321\326\366\207
\127\252\362\051\224\207\163\025\372\152\116\255\002\003\001\000
\001\243\202\001\200\060\202\001\174\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\221\060\253\366\363\306\104\267\353\335\050
\274\017\024\237\122\135\142\177\002\060\071\006\010\053\006\001
\005\005\007\001\001\004\055\060\053\060\051\006\010\053\006\001
\005\005\007\060\001\206\035\150\164\164\160\072\057\057\165\163
\145\162\163\056\157\143\163\160\056\144\055\164\162\165\163\164
\056\156\145\164\060\063\006\003\125\035\021\004\054\060\052\201
\020\151\156\146\157\100\144\055\164\162\165\163\164\056\156\145
\164\206\026\150\164\164\160\072\057\057\167\167\167\056\144\055
\164\162\165\163\164\056\156\145\164\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\201\311\006\003\125\035
\037\004\201\301\060\201\276\060\201\273\240\201\270\240\201\265
\206\166\154\144\141\160\072\057\057\144\151\162\145\143\164\157
\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057\103
\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157\164
\045\062\060\103\154\141\163\163\045\062\060\062\045\062\060\103
\101\045\062\060\062\060\060\067\054\117\075\104\055\124\162\165
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141
\164\151\157\156\154\151\163\164\206\073\150\164\164\160\072\057
\057\167\167\167\056\144\055\164\162\165\163\164\056\156\145\164
\057\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157
\164\137\143\154\141\163\163\137\062\137\143\141\137\062\060\060
\067\056\143\162\154\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\133\213\362\103\343\005\056
\144\037\325\222\251\121\153\144\374\016\106\314\007\231\342\267
\374\223\051\040\334\374\057\140\344\254\175\045\062\355\020\341
\017\157\333\362\274\116\356\101\311\263\324\007\110\172\012\257
\244\266\377\121\060\355\313\322\234\353\177\120\356\113\342\142
\247\064\302\040\366\363\366\365\066\300\313\221\020\353\355\056
\215\364\007\032\041\014\065\167\364\174\055\215\111\245\327\013
\104\150\325\322\342\345\014\170\070\023\312\261\114\122\252\052
\345\325\257\134\005\071\235\055\255\276\043\126\325\057\125\363
\336\235\253\202\066\240\115\267\131\221\107\356\336\203\245\352
\073\136\047\005\200\013\155\054\120\364\001\067\325\243\167\027
\354\376\335\204\364\305\370\120\222\320\113\306\056\243\213\100
\344\303\067\243\167\275\316\054\125\342\254\337\135\144\000\272
\276\247\152\061\006\374\231\153\120\025\045\235\251\166\232\247
\115\052\232\002\143\353\160\347\376\021\046\320\030\305\246\037
\012\103\223\362\030\331\365\071\171\270\007\135\214\037\346\077
\363\305\313\041\146\061\173\173\317

END

CKA_NSS_MOZILLA_CA_POLICY


```

CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "D-TRUST Root Class 2 CA 2007"
# Issuer: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE
# Serial Number: 200341 (0x30e95)
# Subject: CN=D-TRUST Root Class 2 CA 2007,O=D-Trust GmbH,C=DE
# Not Valid Before: Wed May 16 05:20:47 2007
# Not Valid After: Mon May 16 05:20:47 2022
# Fingerprint (MD5): 2c:c2:b0:d5:d6:22:c5:2e:90:1e:f4:63:3f:0f:bb:32
# Fingerprint (SHA1): 4a:05:8f:df:d7:61:db:21:b0:c2:ee:48:57:9b:e2:7f:42:a4:da:1c
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 2 CA 2007"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\112\005\217\337\327\141\333\041\260\302\356\110\127\233\342\177
\102\244\332\034
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\054\302\260\325\326\042\305\056\220\036\364\143\077\017\273\062
END
CKA_ISSUER MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\062\040\103\101\040\062\060\060\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\016\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft
Code Signing Only Certificate
# Certificate "D-TRUST Root Class 3 CA 2007"
# Issuer: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
# Serial Number: 200342 (0x30e96)
# Subject: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE
# Not Valid Before: Wed May 16 05:20:47 2007

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# Not Valid After: Mon May 16 05:20:47 2022
# Fingerprint (MD5): 1e:24:0e:a0:f8:76:d7:85:a3:f5:f8:a1:49:3d:2e:ba
# Fingerprint (SHA1): fd:1e:d1:e2:02:1b:0b:9f:73:e8:eb:75:ce:23:43:6b:bc:c7:46:eb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2007"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\060\060\067
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\060\060\067
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\003\016\226
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\225\060\202\003\175\240\003\002\001\002\002\003\003
\016\226\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165
\163\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003
\014\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103
\154\141\163\163\040\063\040\103\101\040\062\060\060\067\060\036
\027\015\060\067\060\065\061\066\060\065\062\060\064\067\132\027
\015\062\062\060\065\061\066\060\065\062\060\064\067\132\060\113
\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060
\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040
\107\155\142\110\061\045\060\043\006\003\125\004\003\014\034\104
\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163
\163\040\063\040\103\101\040\062\060\060\067\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\272\215\315\065
\123\062\356\246\275\110\220\232\362\352\350\130\017\107\146\250
\314\156\011\022\344\241\313\133\337\223\270\366\351\071\071\370
\306\330\351\317\032\206\274\246\256\017\214\257\010\105\343\362
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\216\053\302\134\131\053\372\214\066\263\160\035\310\120\074\245
\126\276\352\256\351\107\366\347\111\017\257\177\224\046\324\002
\032\007\270\272\071\125\316\237\273\042\071\051\330\065\305\231
\003\041\330\247\070\143\361\344\064\337\107\256\237\067\361\154
\240\231\302\042\260\155\162\334\042\311\061\071\350\126\327\240
\217\072\041\133\206\232\117\050\371\034\166\367\314\117\077\371
\116\167\213\052\234\212\252\171\101\212\325\034\331\071\157\230
\311\136\105\227\035\011\224\031\331\120\121\205\162\163\277\254
\113\235\164\064\161\207\041\026\017\176\356\322\111\176\312\111
\323\371\222\052\107\110\117\017\135\132\241\313\325\050\354\360
\222\305\162\103\106\353\263\003\246\363\127\045\112\012\141\204
\012\046\326\357\246\270\330\024\215\170\271\323\267\045\321\116
\343\132\026\252\354\237\007\356\043\020\175\265\002\003\001\000
\001\243\202\001\200\060\202\001\174\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\202\057\066\043\111\170\040\102\327\260\122
\130\240\326\164\124\025\170\277\252\060\071\006\010\053\006\001
\005\005\007\001\001\004\055\060\053\060\051\006\010\053\006\001
\005\005\007\060\001\206\035\150\164\164\160\072\057\057\165\163
\145\162\163\056\157\143\163\160\056\144\055\164\162\165\163\164
\056\156\145\164\060\063\006\003\125\035\021\004\054\060\052\201
\020\151\156\146\157\100\144\055\164\162\165\163\164\056\156\145
\164\206\026\150\164\164\160\072\057\057\167\167\167\056\144\055
\164\162\165\163\164\056\156\145\164\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\201\311\006\003\125\035
\037\004\201\301\060\201\276\060\201\273\240\201\270\240\201\265
\206\166\154\144\141\160\072\057\057\144\151\162\145\143\164\157
\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057\103
\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157\164
\045\062\060\103\154\141\163\163\045\062\060\063\045\062\060\103
\101\045\062\060\062\060\060\067\054\117\075\104\055\124\162\165
\163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143
\145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141
\164\151\157\156\154\151\163\164\206\073\150\164\164\160\072\057
\057\167\167\167\056\144\055\164\162\165\163\164\056\156\145\164
\057\143\162\154\057\144\055\164\162\165\163\164\137\162\157\157
\164\137\143\154\141\163\163\137\063\137\143\141\137\062\060\060
\067\056\143\162\154\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\125\016\150\012\215\334\331
\250\206\140\002\151\171\215\175\351\220\302\331\035\035\265\016
\273\163\222\144\143\024\106\114\320\152\273\243\165\135\206\031
\070\141\206\035\270\212\042\064\243\264\065\025\263\251\140\114
\124\027\237\261\336\133\062\342\176\153\336\117\042\360\055\035
\042\004\236\266\112\117\253\054\126\235\343\335\354\261\046\116
\052\327\125\302\076\275\202\327\276\125\273\105\310\051\133\206
\074\235\077\150\104\104\104\066\015\150\277\256\001\242\031\265
\114\227\377\362\226\074\147\262\102\336\017\341\240\227\116\312
\347\064\145\256\225\202\141\147\046\163\055\335\173\347\225\113

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\016\041\252\222\256\114\374\306\263\251\345\231\203\062\071\360
\140\302\114\121\250\301\107\024\065\211\245\115\066\017\237\033
\002\161\101\215\102\112\044\370\257\156\235\015\160\206\215\252
\142\023\036\003\213\044\371\303\124\223\111\205\033\165\166\142
\177\042\377\111\275\166\163\014\077\230\255\052\262\372\347\305
\337\164\365\377\151\061\125\012\072\300\031\142\065\304\111\271
\053\031\035\364\160\231\356\330\334
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "D-TRUST Root Class 3 CA 2007"

Issuer: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE

Serial Number: 200342 (0x30e96)

Subject: CN=D-TRUST Root Class 3 CA 2007,O=D-Trust GmbH,C=DE

Not Valid Before: Wed May 16 05:20:47 2007

Not Valid After: Mon May 16 05:20:47 2022

Fingerprint (MD5): 1e:24:0e:a0:f8:76:d7:85:a3:f5:f8:a1:49:3d:2e:ba

Fingerprint (SHA1): fd:1e:d1:e2:02:1b:0b:9f:73:e8:eb:75:ce:23:43:6b:bc:c7:46:eb

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2007"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\375\036\321\342\002\033\013\237\163\350\353\165\316\043\103\153
\274\307\106\353
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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\036\044\016\240\370\166\327\205\243\365\370\241\111\075\056\272
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CKA_ISSUER MULTILINE_OCTAL

```
\060\113\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\045\060\043\006\003\125\004\003\014
\034\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\060\060\067
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END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\003\003\016\226
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END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "SSC Root CA A"

#

Issuer: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

Serial Number:66:07:a3:d2:9d:29:56:18:0e:e1:5e:59:98:b1:84:55

Subject: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

Not Valid Before: Wed Dec 27 12:18:52 2006

Not Valid After: Mon Dec 28 12:05:04 2026

Fingerprint (MD5): 46:8c:21:0e:ab:92:21:46:59:db:a6:db:00:61:de:26

Fingerprint (SHA1): 5a:5a:4d:af:78:61:26:7c:4b:1f:1e:67:58:6b:ae:6e:d4:fe:b9:3f

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SSC Root CA A"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\101

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\146\007\243\322\235\051\126\030\016\341\136\131\230\261
\204\125

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\052\060\202\004\022\240\003\002\001\002\002\020\146
\007\243\322\235\051\126\030\016\341\136\131\230\261\204\125\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\164

\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006\003
\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060\024
\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164\040
\103\101\040\101\060\036\027\015\060\066\061\062\062\067\061\062
\061\070\065\062\132\027\015\062\066\061\062\062\070\061\062\060
\065\060\064\132\060\164\061\013\060\011\006\003\125\004\006\023
\002\114\124\061\053\060\051\006\003\125\004\012\023\042\123\153
\141\151\164\155\145\156\151\156\151\157\040\163\145\162\164\151
\146\151\153\141\166\151\155\157\040\143\145\156\164\162\141\163
\061\040\060\036\006\003\125\004\013\023\027\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\061\026\060\024\006\003\125\004\003\023\015\123\123\103
\040\122\157\157\164\040\103\101\040\101\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\272\352\117\276\204
\300\031\044\212\041\251\114\231\175\367\014\325\245\121\222\250
\145\343\211\243\013\146\347\102\370\171\322\017\203\043\173\267
\246\301\044\326\065\326\330\345\001\312\160\261\026\326\107\156
\276\020\154\176\351\120\156\166\367\345\344\203\017\170\325\240
\163\365\215\321\231\037\224\104\043\226\306\356\162\132\371\332
\135\074\221\257\154\350\227\350\206\135\367\236\213\372\304\254
\146\117\344\162\077\073\335\236\116\065\322\023\037\175\273\104
\113\364\123\254\326\024\327\100\071\272\300\077\374\205\040\323
\304\000\320\347\330\107\231\004\171\207\206\100\262\254\136\311
\165\040\303\011\024\257\004\216\246\242\255\052\127\210\145\241
\314\050\276\066\311\037\045\017\303\153\042\204\071\167\116\072
\003\300\152\333\076\272\266\211\236\344\327\056\232\267\103\001
\077\371\332\254\251\254\344\167\063\207\355\013\071\335\307\301
\255\015\131\203\060\321\066\004\130\264\144\116\346\377\010\350
\102\261\200\253\370\230\377\363\051\206\026\021\044\116\011\241
\317\060\177\274\136\260\012\152\241\161\153\365\232\022\153\045
\155\167\002\242\106\136\371\151\057\373\073\030\225\137\216\134
\227\224\140\136\035\161\250\101\264\135\317\132\172\147\343\324
\112\065\037\067\340\166\026\003\073\364\121\234\230\024\051\111
\210\014\102\320\055\155\251\247\100\046\072\171\000\060\073\300
\273\104\230\255\044\316\321\226\334\211\170\201\366\132\133\102
\274\164\341\207\323\145\310\107\346\066\262\314\301\157\300\307
\334\200\045\122\074\061\220\335\311\310\120\250\172\273\166\340
\357\023\224\316\004\176\152\266\116\167\371\203\320\157\370\072
\320\012\103\312\272\020\266\377\074\035\224\140\224\204\155\365
\245\311\175\114\012\176\057\217\157\375\335\055\173\112\351\357
\064\333\273\176\377\014\157\067\372\371\303\314\311\057\321\351
\054\075\052\254\154\046\073\320\011\136\304\200\047\213\335\141
\360\347\225\121\103\304\015\346\061\320\170\326\301\306\302\146

\001\321\343\314\307\323\036\025\005\066\333\224\232\354\122\303
\221\307\057\261\364\003\367\007\254\323\113\221\253\126\074\320
\256\375\137\155\055\323\000\021\317\223\275\002\003\001\000\001
\243\201\267\060\201\264\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\075\006\003\125\035\040\004\066
\060\064\060\062\006\013\053\006\001\004\001\201\257\145\001\002
\000\060\043\060\041\006\010\053\006\001\005\005\007\002\001\026
\025\150\164\164\160\072\057\057\167\167\167\056\163\163\143\056
\154\164\057\143\160\163\060\063\006\003\125\035\037\004\054\060
\052\060\050\240\046\240\044\206\042\150\164\164\160\072\057\057
\143\162\154\056\163\163\143\056\154\164\057\162\157\157\164\055
\141\057\143\141\143\162\154\056\143\162\154\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125
\035\016\004\026\004\024\314\277\336\247\220\167\142\152\035\170
\151\056\012\070\233\167\121\123\003\360\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\002\001\000\076\257
\310\250\307\063\117\360\156\232\103\341\362\260\127\122\341\234
\236\006\137\102\326\361\375\312\213\121\077\341\307\145\151\117
\164\031\120\212\317\030\223\111\215\240\034\260\073\075\216\110
\223\331\350\005\176\304\011\261\017\122\212\153\227\157\327\216
\074\200\000\320\101\163\255\075\303\104\007\161\152\217\142\176
\005\330\123\140\162\261\001\351\000\142\252\015\330\330\111\302
\264\175\015\133\263\227\051\066\231\271\247\321\113\230\153\104
\274\262\022\216\166\144\165\114\015\315\302\056\263\130\374\172
\117\125\263\131\177\135\340\057\060\063\317\210\033\151\351\115
\212\220\236\220\271\061\072\363\242\005\274\376\371\335\120\215
\016\224\031\235\176\215\252\025\176\017\122\223\045\344\201\016
\226\055\034\003\034\060\203\021\226\102\251\230\244\235\137\311
\251\134\073\111\150\302\204\155\231\332\366\376\242\362\334\067
\136\215\172\345\245\127\312\043\113\223\135\222\052\125\204\263
\226\263\036\230\224\111\174\154\074\334\236\035\266\253\303\254
\011\305\235\336\067\327\124\304\234\255\077\260\326\151\001\345
\020\206\175\271\201\203\156\234\146\116\225\005\222\220\061\207
\046\262\332\221\164\275\204\344\161\150\344\166\000\340\166\163
\064\107\206\225\145\272\133\220\242\155\005\051\170\140\353\206
\371\022\115\350\010\126\244\314\214\242\126\112\316\200\364\024
\141\042\345\253\035\072\101\073\204\327\202\170\005\057\254\035
\043\150\253\162\171\205\315\106\346\172\247\202\132\050\320\025
\075\035\333\214\230\120\316\373\257\130\073\323\251\256\200\073
\026\000\166\047\325\160\351\011\215\066\224\011\177\343\357\140
\020\121\312\306\125\160\146\253\121\157\363\121\117\022\126\256
\373\327\331\015\340\372\253\020\336\152\201\254\205\167\055\254
\172\143\173\106\341\067\332\127\156\255\145\374\041\004\231\205
\001\317\043\072\062\305\355\132\233\325\241\202\004\167\021\105
\216\244\104\175\302\313\313\247\017\350\022\272\362\156\272\217
\063\060\033\335\051\370\360\102\243\156\102\245\156\372\126\245
\251\120\203\321\005\146\026\213\055\373\346\222\321\346\154\013
\325\132\051\155\053\317\171\327\331\332\117\360\150\266

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "SSC Root CA A"
# Issuer: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:66:07:a3:d2:9d:29:56:18:0e:e1:5e:59:98:b1:84:55
# Subject: CN=SSC Root CA A,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:18:52 2006
# Not Valid After: Mon Dec 28 12:05:04 2026
# Fingerprint (MD5): 46:8c:21:0e:ab:92:21:46:59:db:a6:db:00:61:de:26
# Fingerprint (SHA1): 5a:5a:4d:af:78:61:26:7c:4b:1f:1e:67:58:6b:ae:6e:d4:fe:b9:3f
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA A"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\132\132\115\257\170\141\046\174\113\037\036\147\130\153\256\156
\324\376\271\077
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\106\214\041\016\253\222\041\106\131\333\246\333\000\141\336\046
END
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\146\007\243\322\235\051\126\030\016\341\136\131\230\261
\204\125
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```



```
# Microsoft Code Signing Only Certificate
# Certificate "SSC Root CA B"
# Issuer: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:be:92:83:18:f3:55:8a:78:a3:67:59:1c:69:24:09:3f
# Subject: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:22:50 2006
# Not Valid After: Fri Dec 25 12:08:26 2026
# Fingerprint (MD5): da:26:b6:e6:c7:c2:f7:b7:9e:46:59:b3:57:77:18:65
# Fingerprint (SHA1): 3e:84:d3:bc:c5:44:c0:f6:fa:19:43:5c:85:1f:3f:2f:cb:a8:e8:14
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA B"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\102
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\102
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\276\222\203\030\363\125\212\170\243\147\131\034\151
\044\011\077
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\053\060\202\004\023\240\003\002\001\002\002\021\000
\276\222\203\030\363\125\212\170\243\147\131\034\151\044\011\077
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053
\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145
```

\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166
\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006
\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060
\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164
\040\103\101\040\102\060\036\027\015\060\066\061\062\062\067\061
\062\062\062\065\060\132\027\015\062\066\061\062\062\065\061\062
\060\070\062\066\132\060\164\061\013\060\011\006\003\125\004\006
\023\002\114\124\061\053\060\051\006\003\125\004\012\023\042\123
\153\141\151\164\155\145\156\151\156\151\157\040\163\145\162\164
\151\146\151\153\141\166\151\155\157\040\143\145\156\164\162\141
\163\061\040\060\036\006\003\125\004\013\023\027\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\061\026\060\024\006\003\125\004\003\023\015\123\123
\103\040\122\157\157\164\040\103\101\040\102\060\202\002\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\002\017\000\060\202\002\012\002\202\002\001\000\301\363\125\365
\107\121\116\125\027\145\215\260\262\101\050\241\112\321\237\113
\366\163\377\076\322\311\115\131\077\344\267\307\237\006\135\330
\074\243\210\204\340\163\135\375\005\352\307\216\327\244\004\152
\353\237\275\103\375\024\222\106\270\305\272\252\355\140\354\354
\312\220\215\012\162\251\101\233\324\235\274\260\154\242\021\037
\144\313\347\035\324\105\147\016\011\153\345\170\354\361\077\004
\124\363\232\231\307\131\321\322\171\247\244\032\260\174\111\374
\034\207\124\136\170\006\325\335\035\314\205\240\102\170\325\320
\260\212\352\350\361\241\236\126\357\323\301\175\207\254\347\332
\150\117\031\326\157\340\223\255\111\134\163\024\301\106\152\235
\367\130\100\331\127\130\116\154\067\364\162\043\004\370\333\112
\260\336\361\101\226\022\100\241\025\213\147\270\136\170\126\313
\177\344\276\300\111\150\221\270\107\010\223\201\301\265\033\061
\006\323\200\173\321\105\241\317\014\075\141\363\222\370\361\260
\025\016\370\056\060\133\000\243\111\367\155\376\356\334\277\210
\317\360\175\127\076\257\300\321\212\353\174\322\155\061\125\372
\204\215\163\152\332\160\200\304\364\302\317\220\216\060\232\341
\306\065\162\001\010\346\077\346\146\000\243\362\370\222\035\274
\122\354\217\366\334\367\012\357\274\020\207\371\204\030\214\136
\037\003\270\377\065\057\001\152\345\360\133\142\174\343\263\177
\063\252\224\327\116\121\201\265\350\127\170\217\042\226\251\014
\211\124\076\266\356\331\163\137\144\364\104\341\361\152\030\377
\122\226\304\034\277\211\227\244\303\247\312\176\030\156\026\334
\023\214\273\325\265\045\011\206\257\366\057\105\224\052\060\301
\024\224\065\366\135\312\045\225\234\261\130\211\270\265\140\205
\311\306\276\024\031\243\076\371\126\205\253\312\154\326\231\171
\242\112\024\157\303\072\330\347\146\121\012\351\034\376\314\151
\346\064\154\364\201\333\175\242\021\370\114\304\207\005\026\075
\353\227\164\077\156\354\234\271\266\047\214\044\337\055\263\257
\335\023\141\166\217\377\362\114\340\010\031\060\062\044\062\134
\066\200\027\356\206\311\337\057\121\342\126\256\203\222\360\263

\275\330\207\072\054\236\304\334\151\231\371\313\002\003\001\000
\001\243\201\267\060\201\264\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\075\006\003\125\035\040\004
\066\060\064\060\062\006\013\053\006\001\004\001\201\257\145\001
\002\000\060\043\060\041\006\010\053\006\001\005\005\007\002\001
\026\025\150\164\164\160\072\057\057\167\167\167\056\163\163\143
\056\154\164\057\143\160\163\060\063\006\003\125\035\037\004\054
\060\052\060\050\240\046\240\044\206\042\150\164\164\160\072\057
\057\143\162\154\056\163\163\143\056\154\164\057\162\157\157\164
\055\142\057\143\141\143\162\154\056\143\162\154\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003
\125\035\016\004\026\004\024\234\003\360\250\322\230\162\150\256
\362\355\340\117\342\205\016\262\045\116\317\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000\254
\134\274\057\374\256\001\044\246\020\076\254\250\341\247\047\231
\215\312\210\301\035\075\221\366\242\176\245\361\230\101\377\252
\141\370\011\276\315\032\045\141\164\264\303\257\102\132\011\017
\221\001\276\110\225\364\312\167\136\013\203\316\204\235\317\100
\375\200\054\275\343\146\065\012\270\261\372\140\332\345\330\124
\265\113\227\272\242\032\303\040\151\215\264\106\163\134\252\277
\275\173\377\032\060\064\130\100\371\053\140\013\171\104\371\367
\242\226\013\153\122\173\360\053\113\073\322\213\240\153\223\075
\311\127\143\212\153\314\120\023\217\167\250\121\276\032\114\055
\114\135\014\220\133\216\363\357\120\040\155\201\346\121\111\253
\304\347\327\135\010\053\121\374\075\106\022\347\321\245\166\305
\123\044\005\311\252\323\216\130\305\363\212\164\222\062\355\360
\057\335\253\255\351\322\065\217\164\043\343\231\000\342\213\060
\344\303\102\256\360\273\351\342\010\033\112\160\055\175\370\322
\232\047\221\102\160\165\172\010\176\276\057\034\177\067\075\250
\213\334\106\162\365\350\157\066\150\372\156\215\040\235\324\365
\007\161\277\275\047\102\271\163\050\326\354\111\264\005\205\117
\150\110\366\253\224\337\016\243\106\024\140\302\061\040\073\353
\056\133\336\325\241\054\155\345\122\372\201\137\227\210\311\143
\275\001\354\343\315\153\012\065\302\311\070\343\016\363\130\033
\175\332\220\155\267\365\310\130\126\235\256\001\337\221\235\255
\125\202\003\014\021\164\004\221\206\307\174\223\214\363\047\373
\305\044\127\156\213\331\033\230\235\210\061\360\257\167\270\015
\264\314\317\366\012\157\022\233\354\011\053\123\211\354\104\340
\241\151\213\250\164\206\164\030\122\340\322\277\240\241\145\041
\271\010\203\172\363\244\365\370\136\067\045\107\231\246\135\327
\042\132\333\223\147\027\333\020\343\214\321\022\221\107\212\225
\245\107\241\003\370\113\056\041\305\220\142\260\177\047\243\333
\025\177\070\177\154\177\116\005\305\003\264\055\337\105\137\165
\054\035\361\137\246\265\366\027\071\101\351\370\145\302\036\130
\021\312\174\216\342\265\272\222\017\147\267\217\353\231\324\061
\373\162\173\132\230\137\222\224\307\004\352\060\366\273\032

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "SSC Root CA B"
# Issuer: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:be:92:83:18:f3:55:8a:78:a3:67:59:1c:69:24:09:3f
#
Subject: CN=SSC Root CA B,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:22:50 2006
# Not Valid After: Fri Dec 25 12:08:26 2026
# Fingerprint (MD5): da:26:b6:e6:c7:c2:f7:b7:9e:46:59:b3:57:77:18:65
# Fingerprint (SHA1): 3e:84:d3:bc:c5:44:c0:f6:fa:19:43:5c:85:1f:3f:2f:cb:a8:e8:14
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA B"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\076\204\323\274\305\104\300\366\372\031\103\134\205\037\077\057
\313\250\350\024
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\046\266\346\307\302\367\267\236\106\131\263\127\167\030\145
END
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\102
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\276\222\203\030\363\125\212\170\243\147\131\034\151
\044\011\077
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SSC Root CA C"

```

```
# Issuer: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:34:b9:12:9f:ac:c7:92:55:42:5c:de:57:ff:e3:c0:05
# Subject: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Wed Dec 27 12:26:30 2006
# Not Valid After: Tue Dec
22 12:11:30 2026
# Fingerprint (MD5): 3c:4c:25:cc:0a:19:ca:ee:6a:eb:55:16:00:86:72:5f
# Fingerprint (SHA1): 23:e8:33:23:3e:7d:0c:c9:2b:7c:42:79:ac:19:c2:f4:74:d6:04:ca
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC Root CA C"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\064\271\022\237\254\307\222\125\102\134\336\127\377\343
\300\005
END
CKA_VALUE MULTILINE_OCTAL
\060\202\006\052\060\202\004\022\240\003\002\001\002\002\020\064
\271\022\237\254\307\222\125\102\134\336\127\377\343\300\005\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\164
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\040\060\036\006\003
```

\125\004\013\023\027\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\061\026\060\024
\006\003\125\004\003\023\015\123\123\103\040\122\157\157\164\040
\103\101\040\103\060\036\027\015\060\066\061\062\062\067\061\062
\062\066\063\060\132\027\015\062\066\061\062\062\062\061\062\061
\061\063\060\132\060\164\061\013\060\011\006\003\125\004\006\023
\002\114\124\061\053\060\051\006\003\125\004\012\023\042\123\153
\141\151\164\155\145\156\151\156\151\157\040\163\145\162\164\151
\146\151\153\141\166\151\155\157\040\143\145\156\164\162\141\163
\061\040\060\036\006\003\125\004\013\023\027\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\061\026\060\024\006\003\125\004\003\023\015\123\123\103
\040\122\157\157\164\040\103\101\040\103\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\241\105\042\372\214
\314\251\157\004\263\364\150\062\026\151\021\117\171\337\103\275
\121\140\160\032\230\335\170\170\226\230\142\367\160\113\201\250
\340\035\004\211\364\217\353\156\351\360\377\201\330\056\175\257
\027\040\361\042\357\360\077\105\107\100\264\313\262\270\040\077
\076\112\150\120\377\232\006\327\227\305\267\212\026\056\161\322
\107\163\135\030\145\057\357\071\063\350\266\125\257\046\255\002
\200\351\143\327\041\160\007\076\314\276\137\211\300\370\316\035
\045\156\303\374\177\126\071\141\321\216\302\046\172\347\170\002
\012\131\335\125\043\260\370\065\247\342\253\363\253\057\327\265
\213\012\052\162\124\053\155\171\274\362\331\351\103\371\317\361
\216\146\022\367\227\131\052\331\327\224\334\370\224\263\105\243
\257\026\055\263\200\312\075\316\350\246\307\012\224\164\374\067
\232\351\077\014\067\026\040\103\311\107\160\273\214\205\374\230
\211\051\313\207\031\176\031\123\020\211\200\165\256\023\361\277
\244\135\060\005\051\174\250\367\266\136\007\060\025\210\256\115
\025\240\312\315\327\377\253\243\006\127\017\247\343\211\151\034
\326\032\321\324\047\337\226\306\070\134\257\167\376\025\253\104
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\004\262\007\323\002\020\224\363\373\335\261\173\160\270\264\310
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\062\273\011\106\021\015\164\274\047\345\330\355\055\372\120\051
\334\045\312\227\020\347\251\242\141\056\072\211\246\104\141\276
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\312\330\364\032\103\224\320\175\013\341\130\076\032\310\164\204
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\037\223\042\171\330\315\304\171\140\043\225\002\003\001\000\001
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\060\064\060\062\006\013\053\006\001\004\001\201\257\145\001\002
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\143\162\154\056\163\163\143\056\154\164\057\162\157\157\164\055
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\313\071\261\267\257\005\244\327\130\363\221\121\175\216\201\047
\234\350\222\261\347\034\237\072\213\020\122\163\114\302\307\102
\035\320\353\336\052\312\042\121\175\214\164\172\032\374\274\244
\363\163\310\146\043\304\056\103\020\107\340\212\151\127\356\057
\362\000\122\260\060\222\252\326\324\025\305\127\313\140\172\364
\016\215\376\036\011\143\164\217\340\376\276\120\331\001\071\126
\272\120\114\366\343\105\232\273\122\166\336\176\235\373\215\302
\124\061\076\307\261\074\076\337\343\117\375\335\233\044\151\174
\355\350\161\266\102\006\307\037\305\137\373\040\165\333\301\375
\351\154\242\052\220\324\206\375\315\015\377\340\005\212\130\141
\075\237\304\231\057\355\333\174\304\015\230\230\125\234\164\242
\027\136\333\252\021\344\067\014\044\377\040\147\321\045\333\232
\211\240\145\210\061\221\004\161\137\040\224\130\063\066\035\062
\336\157\327\147\010\251\240\073\375\333\244\120\045\226\036\251
\137\211\027\245\227\231\121\225\151\333\304\361\217\364\157\060
\053\131\363\254\165\207\063\175\006\335\341\301\153\326\304\311
\136\160\104\172\152\307\234\167\073\026\376\376\165\276\237\054
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\035\360\114\073\247\333\352\315\126\330\224\127\077\340\110\251
\177\214\063\113\275\364\014\145\024\200\202\364\065\167\330\004
\020\160\316\017\154\301\131\313\231\255\201\356\336\075\110\320
\172\210\057\100\223\327\234\272\171\204\030\200\165\337\320\132
\337\121\167\076\130\211\151\165\107\061\344\152\026\160\124\004
\354\275\134\171\123\143\322\342\136\275\115\045\332\021\266\017
\252\351\054\256\365\321\251\215\002\126\313\374\260\044\352\214
\272\160\377\062\320\267\306\004\052\143\325\312\106\221\325\231
\162\011\007\136\050\003\253\022\034\045\263\154\072\131\145\264
\164\155\055\055\031\162\157\375\347\230\021\207\036\163\043\277
\065\361\233\266\303\331\314\073\120\174\162\350\317\136\300\230
\314\056\003\375\037\057\312\164\134\261\034\321\354\151

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SSC Root CA C"

Issuer: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

Serial Number:34:b9:12:9f:ac:c7:92:55:42:5c:de:57:ff:e3:c0:05

Subject: CN=SSC Root CA C,OU=Certification Authority,O=Skaitmeninio sertifikavimo centras,C=LT

Not Valid Before: Wed Dec 27 12:26:30 2006

Not Valid After: Tue Dec 22 12:11:30 2026

Fingerprint (MD5): 3c:4c:25:cc:0a:19:ca:ee:6a:eb:55:16:00:86:72:5f

Fingerprint (SHA1): 23:e8:33:23:3e:7d:0c:c9:2b:7c:42:79:ac:19:c2:f4:74:d6:04:ca

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SSC Root CA C"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\043\350\063\043\076\175\014\311\053\174\102\171\254\031\302\364
\164\326\004\312

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\074\114\045\314\012\031\312\356\152\353\125\026\000\206\162\137

END

CKA_ISSUER

MULTILINE_OCTAL

\060\164\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\040\060\036
\006\003\125\004\013\023\027\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\026
\060\024\006\003\125\004\003\023\015\123\123\103\040\122\157\157
\164\040\103\101\040\103

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\064\271\022\237\254\307\222\125\102\134\336\127\377\343
\300\005

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Autoridad de Certificacion
de la Abogacia"

Issuer: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

Serial Number:90:8b:32:4f:c1:90:1a:ce:b4:c3:38:09:cd:cf:e4


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# Subject: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES
# Not Valid Before: Mon Jun 13 22:00:00 2005
# Not Valid After: Thu Jun 13 22:00:00 2030
# Fingerprint (MD5): 15:ee:9f:5a:a0:85:28:df:6b:dd:34:a3:a0:56:d8:30
# Fingerprint (SHA1): 7f:8a:77:83:6b:dc:6d:06:8f:8b:07:37:fc:c5:72:54:13:06:8c:a4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion de la Abogacia"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\171\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\144\145\040
\154\141\040\101\142\157\147\141\143\151\141
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CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
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\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103
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\317\344
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\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\171
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\066\060
\064\006\003\125\004\012\023\055\103\157\156\163\145\152\157\040
\107\145\156\145\162\141\154\040\144\145\040\154\141\040\101\142
\157\147\141\143\151\141\040\116\111\106\072\121\055\062\070\066
\063\060\060\066\111\061\062\060\060\006\003\125\004\003\023\051
\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162
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\164\151\146\151\143\141\143\151\157\156\040\144\145\040\154\141
\040\101\142\157\147\141\143\151\141\060\036\027\015\060\065\060
\066\061\063\062\062\060\060\060\060\132\027\015\063\060\060\066
\061\063\062\062\060\060\060\060\132\060\171\061\013\060\011\006
\003\125\004\006\023\002\105\123\061\066\060\064\006\003\125\004
\012\023\055\103\157\156\163\145\152\157\040\107\145\156\145\162
\141\154\040\144\145\040\154\141\040\101\142\157\147\141\143\151
\141\040\116\111\106\072\121\055\062\070\066\063\060\060\066\111
\061\062\060\060\006\003\125\004\003\023\051\101\165\164\157\162
\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143
\141\143\151\157\156\040\144\145\040\154\141\040\101\142\157\147
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\031\123\311\325\350\034\120\153\141\002\214\207\360\217\074\301
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\270\075\262\263\076\212\305\012\062\323\113\221\357\111\165\176
\126\367\376\240\010\142\106\053\316\352\362\121\237\140\336\062
\310\355\032\247\317\165\134\353\075\300\275\232\110\245\206\224
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\164\103\312\070\304\065\224\130\216\365\212\260\150\074\050\054
\104\226\011\277\011\133\162\012\347\147\074\220\271\124\070\164
\124\273\155\055\152\103\310\274\357\011\254\037\043\350\122\126
\136\065\027\137\053\273\136\315\145\122\245\024\174\073\262\252
\351\335\047\265\067\043\073\006\015\054\173\215\272\332\157\146
\027\206\247\266\327\036\007\135\036\154\031\227\310\345\043\163
\170\321\256\371\036\272\241\256\111\042\355\145\161\037\177\367
\132\164\104\215\103\002\003\001\000\001\243\202\001\076\060\202
\001\072\060\067\006\003\125\035\021\004\060\060\056\201\021\141
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\206\031\150\164\164\160\072\057\057\167\167\167\056\141\143\141
\142\157\147\141\143\151\141\056\157\162\147\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\021\006\011
\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060
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\253\006\003\125\035\040\004\201\243\060\201\240\060\201\235\006
\013\053\006\001\004\001\201\201\025\012\001\001\060\201\215\060
\051\006\010\053\006\001\005\005\007\002\001\026\035\150\164\164
\160\072\057\057\167\167\167\056\141\143\141\142\157\147\141\143
\151\141\056\157\162\147\057\144\157\143\060\140\006\010\053\006
\001\005\005\007\002\002\060\124\032\122\103\157\156\163\165\154
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\156\040\144\145\040\160\162\141\143\164\151\143\141\163\040\144
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\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000
\230\247\372\071\265\163\021\046\177\274\211\077\264\153\045\063
\061\012\206\070\153\311\036\025\227\024\340\322\114\055\205\364
\074\164\233\215\050\021\373\314\016\046\271\200\203\026\321\371
\106\230\266\106\007\216\146\205\155\160\300\272\114\200\363\244
\360\325\067\124\053\257\146\204\162\163\371\110\057\011\316\341
\205\001\312\217\340\207\336\240\227\320\224\264\015\265\115\016
\147\054\310\140\304\062\224\300\101\201\007\215\272\277\251\350
\014\100\232\102\170\005\135\201\353\142\034\344\117\024\012\075
\013\076\037\351\364\315\175\356\105\273\274\336\135\363\230\227
\046\173\306\023\051\370\053\177\032\324\352\372\262\156\040\236
\332\027\352\241\222\275\067\351\016\273\273\221\325\045\366\140
\135\205\041\120\133\377\124\135\365\113\073\264\303\051\021\130
\002\366\045\344\341\202\202\273\242\215\347\221\044\136\100\221
\236\107\007\214\063\127\324\142\061\121\166\165\205\103\157\011
\253\021\245\045\051\271\330\377\137\245\367\077\353\145\073\035
\357\206\345\026\042\325\036\312\062\151\175\176\005\327\060\047
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Autoridad de Certificacion de la Abogacia"

Issuer: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

Serial Number:90:8b:32:4f:c1:90:1a:ce:b4:c3:38:09:cd:cf:e4

Subject: CN=Autoridad de Certificacion de la Abogacia,O=Consejo General de la Abogacia NIF:Q-2863006I,C=ES

Not Valid Before: Mon Jun 13 22:00:00 2005

Not Valid After: Thu Jun 13 22:00:00 2030

Fingerprint (MD5): 15:ee:9f:5a:a0:85:28:df:6b:dd:34:a3:a0:56:d8:30

Fingerprint (SHA1): 7f:8a:77:83:6b:dc:6d:06:8f:8b:07:37:fc:c5:72:54:13:06:8c:a4

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Autoridad de Certificacion de la Abogacia"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\177\212\167\203\153\334\155\006\217\213\007\067\374\305\162\124
\023\006\214\244
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\025\356\237\132\240\205\050\337\153\335\064\243\240\126\330\060
```

END

CKA_ISSUER MULTILINE_OCTAL

\060\171\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\066\060\064\006\003\125\004\012\023\055\103\157\156\163\145\152
\157\040\107\145\156\145\162\141\154\040\144\145\040\154\141\040
\101\142\157\147\141\143\151\141\040\116\111\106\072\121\055\062
\070\066\063\060\060\066\111\061\062\060\060\006\003\125\004\003
\023\051\101\165\164\157\162\151\144\141\144\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\144\145\040
\154\141\040\101\142\157\147\141\143\151\141

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\000\220\213\062\117\301\220\032\316\264\303\070\011\315
\317\344

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code

Signing Only Certificate

Certificate "Root CA Generalitat Valenciana"

Issuer: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES

Serial Number:3b:45:e5:68

Subject: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES

Not Valid Before: Fri Jul 06 16:22:47 2001

Not Valid After: Thu Jul 01 15:22:47 2021

Fingerprint (MD5): 2c:8c:17:5e:b1:54:ab:93:17:b5:36:5a:db:d1:c6:f2

Fingerprint (SHA1): a0:73:e5:c5:bd:43:61:0d:86:4c:21:13:0a:85:58:57:cc:9c:ea:46

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Root CA Generalitat Valenciana"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141
\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141
\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126
\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164
\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040
\126\141\154\145\156\143\151\141\156\141

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141
\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141
\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126
\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164
\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040
\126\141\154\145\156\143\151\141\156\141

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\004\073\105\345\150

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\213\060\202\005\163\240\003\002\001\002\002\004\073
\105\345\150\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\150\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\037\060\035\006\003\125\004\012\023\026\107\145\156\145
\162\141\154\151\164\141\164\040\126\141\154\145\156\143\151\141
\156\141\061\017\060\015\006\003\125\004\013\023\006\120\113\111
\107\126\101\061\047\060\045\006\003\125\004\003\023\036\122\157
\157\164\040\103\101\040\107\145\156\145\162\141\154\151\164\141
\164\040\126\141\154\145\156\143\151\141\156\141\060\036\027\015
\060\061\060\067\060\066\061\066\062\062\064\067\132\027\015\062
\061\060\067\060\061\061\065\062\062\064\067\132\060\150\061\013
\060\011\006\003\125\004\006\023\002\105\123\061\037\060\035\006
\003\125\004\012\023\026\107\145\156\145\162\141\154\151\164\141
\164\040\126\141\154\145\156\143\151\141\156\141\061\017\060\015
\006\003\125\004\013\023\006\120\113\111\107\126\101\061\047\060
\045\006\003\125\004\003\023\036\122\157\157\164\040\103\101\040
\107\145\156\145\162\141\154\151\164\141\164\040\126\141\154\145
\156\143\151\141\156\141\060\202\001\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202
\001\012\002\202\001\001\000\306\052\253\127\021\067\057\042\212
\312\003\164\035\312\355\055\242\013\274\063\122\100\046\107\276
\132\151\246\073\162\066\027\114\350\337\270\273\057\166\341\100
\106\164\145\002\220\122\010\264\377\250\214\301\340\307\211\126
\020\071\063\357\150\264\137\137\332\155\043\241\211\136\042\243
\112\006\360\047\360\127\271\370\351\116\062\167\012\077\101\144
\363\353\145\356\166\376\124\252\175\035\040\256\363\327\164\302
\012\137\365\010\050\122\010\314\125\135\322\017\333\232\201\245
\273\241\263\301\224\315\124\340\062\165\061\221\032\142\262\336
\165\342\317\117\211\331\221\220\017\101\033\264\132\112\167\275
\147\203\340\223\347\136\247\014\347\201\323\364\122\254\123\262
\003\307\104\046\373\171\345\313\064\140\120\020\173\033\333\153
\327\107\253\137\174\150\312\156\235\101\003\020\356\153\231\173
\136\045\250\302\253\344\300\363\134\234\343\276\316\061\114\144
\036\136\200\242\365\203\176\014\326\312\214\125\216\276\340\276
\111\007\017\243\044\101\172\130\035\204\352\130\022\310\341\267
\355\357\223\336\224\010\061\002\003\001\000\001\243\202\003\073

\060\202\003\067\060\062\006\010\053\006\001\005\005\007\001\001
\004\046\060\044\060\042\006\010\053\006\001\005\005\007\060\001
\206\026\150\164\164\160\072\057\057\157\143\163\160\056\160\153
\151\056\147\166\141\056\145\163\060\022\006\003\125\035\023\001
\001\377\004\010\060\006\001\001\377\002\001\002\060\202\002\064
\006\003\125\035\040\004\202\002\053\060\202\002\047\060\202\002
\043\006\012\053\006\001\004\001\277\125\002\001\000\060\202\002
\023\060\202\001\350\006\010\053\006\001\005\005\007\002\002\060
\202\001\332\036\202\001\326\000\101\000\165\000\164\000\157\000
\162\000\151\000\144\000\141\000\144\000\040\000\144\000\145\000
\040\000\103\000\145\000\162\000\164\000\151\000\146\000\151\000
\143\000\141\000\143\000\151\000\363\000\156\000\040\000\122\000
\141\000\355\000\172\000\040\000\144\000\145\000\040\000\154\000
\141\000\040\000\107\000\145\000\156\000\145\000\162\000\141\000
\154\000\151\000\164\000\141\000\164\000\040\000\126\000\141\000
\154\000\145\000\156\000\143\000\151\000\141\000\156\000\141\000
\056\000\015\000\012\000\114\000\141\000\040\000\104\000\145\000
\143\000\154\000\141\000\162\000\141\000\143\000\151\000\363\000
\156\000\040\000\144\000\145\000\040\000\120\000\162\000\341\000
\143\000\164\000\151\000\143\000\141\000\163\000\040\000\144\000
\145\000\040\000\103\000\145\000\162\000\164\000\151\000\146\000
\151\000\143\000\141\000\143\000\151\000\363\000\156\000\040\000
\161\000\165\000\145\000\040\000\162\000\151\000\147\000\145\000
\040\000\145\000\154\000\040\000\146\000\165\000\156\000\143\000
\151\000\157\000\156\000\141\000\155\000\151\000\145\000\156\000
\164\000\157\000\040\000\144\000\145\000\040\000\154\000\141\000
\040\000\160\000\162\000\145\000\163\000\145\000\156\000\164\000
\145\000\040\000\101\000\165\000\164\000\157\000\162\000\151\000
\144\000\141\000\144\000\040\000\144\000\145\000\040\000\103\000
\145\000\162\000\164\000\151\000\146\000\151\000\143\000\141\000
\143\000\151\000\363\000\156\000\040\000\163\000\145\000\040\000
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\144\000\151\000\162\000\145\000\143\000\143\000\151\000\363\000
\156\000\040\000\167\000\145\000\142\000\040\000\150\000\164\000
\164\000\160\000\072\000\057\000\057\000\167\000\167\000\167\000
\056\000\160\000\153\000\151\000\056\000\147\000\166\000\141\000
\056\000\145\000\163\000\057\000\143\000\160\000\163\060\045\006
\010\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072
\057\057\167\167\167\056\160\153\151\056\147\166\141\056\145\163
\057\143\160\163\060\035\006\003\125\035\016\004\026\004\024\173
\065\323\100\322\034\170\031\146\357\164\020\050\334\076\117\262
\170\004\374\060\201\225\006\003\125\035\043\004\201\215\060\201
\212\200\024\173\065\323\100\322\034\170\031\146\357\164\020\050
\334\076\117\262\170\004\374\241\154\244\152\060\150\061\013\060
\011\006\003\125\004\006\023\002\105\123\061\037\060\035\006\003
\125\004\012\023\026\107\145\156\145\162\141\154\151\164\141\164
\040\126\141\154\145\156\143\151\141\156\141\061\017\060\015\006

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\003\125\004\013\023\006\120\113\111\107\126\101\061\047\060\045
\006\003\125\004\003\023\036\122\157\157\164\040\103\101\040\107
\145\156\145\162\141\154\151\164\141\164\040\126\141\154\145\156
\143\151\141\156\141\202\004\073\105\345\150\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\044
\141\116\365\265\310\102\002\052\263\134\165\255\305\155\312\347
\224\077\245\150\225\210\301\124\300\020\151\242\022\057\030\077
\045\120\250\174\112\352\306\011\331\364\165\306\100\332\257\120
\235\075\245\026\273\155\061\306\307\163\012\110\376\040\162\355
\157\314\350\203\141\026\106\220\001\225\113\175\216\232\122\011
\057\366\157\034\344\241\161\317\214\052\132\027\163\203\107\115
\017\066\373\004\115\111\121\342\024\311\144\141\373\324\024\340
\364\236\267\064\217\012\046\275\227\134\364\171\072\112\060\031
\314\255\117\240\230\212\264\061\227\052\342\163\155\176\170\270
\370\210\211\117\261\042\221\144\113\365\120\336\003\333\345\305
\166\347\023\146\165\176\145\373\001\237\223\207\210\235\371\106
\127\174\115\140\257\230\163\023\043\244\040\221\201\372\320\141
\146\270\175\321\257\326\157\036\154\075\351\021\375\251\371\202
\042\206\231\063\161\132\352\031\127\075\221\315\251\300\243\156
\007\023\246\311\355\370\150\243\236\303\132\162\011\207\050\321
\304\163\304\163\030\137\120\165\026\061\237\267\350\174\303
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Root CA Generalitat Valenciana"

Issuer: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat Valenciana,C=ES

Serial Number:3b:45:e5:68

Subject: CN=Root CA Generalitat Valenciana,OU=PKIGVA,O=Generalitat
Valenciana,C=ES

Not Valid Before: Fri Jul 06 16:22:47 2001

Not Valid After: Thu Jul 01 15:22:47 2021

Fingerprint (MD5): 2c:8c:17:5e:b1:54:ab:93:17:b5:36:5a:db:d1:c6:f2

Fingerprint (SHA1): a0:73:e5:c5:bd:43:61:0d:86:4c:21:13:0a:85:58:57:cc:9c:ea:46

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Root CA Generalitat Valenciana"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\240\163\345\305\275\103\141\015\206\114\041\023\012\205\130\127
\314\234\352\106
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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\054\214\027\136\261\124\253\223\027\265\066\132\333\321\306\362
```

```

END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\037\060\035\006\003\125\004\012\023\026\107\145\156\145\162\141
\154\151\164\141\164\040\126\141\154\145\156\143\151\141\156\141
\061\017\060\015\006\003\125\004\013\023\006\120\113\111\107\126
\101\061\047\060\045\006\003\125\004\003\023\036\122\157\157\164
\040\103\101\040\107\145\156\145\162\141\154\151\164\141\164\040
\126\141\154\145\156\143\151\141\156\141
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\073\105\345\150
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "EBG Elektronik Sertifika Hizmet Salaycs"
# Issuer: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A.,CN=EBG Elektronik Sertifika Hizmet Salaycs
# Serial Number:4c:af:73:42:1c:8e:74:02
# Subject: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A.,CN=EBG Elektronik Sertifika Hizmet Salaycs
# Not Valid Before: Thu Aug 17 00:21:09 2006
# Not Valid After: Sun Aug 14 00:31:09 2016
# Fingerprint (MD5): 2c:20:26:9d:cb:1a:4a:00:85:b5:b7:5a:ae:c2:01:37
# Fingerprint (SHA1): 8c:96:ba:eb:dd:2b:07:07:48:ee:30:32:66:a0:f3:98:6e:7c:ae:58
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "EBG Elektronik Sertifika Hizmet Salaycs"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\200\061\070\060\066\006\003\125\004\003\014\057\105\102
\107\040\105\154\145\153\164\162\157\156\151\153\040\123\145\162
\164\151\146\151\153\141\040\110\151\172\155\145\164\040\123\141
\304\237\154\141\171\304\261\143\304\261\163\304\261\061\067\060
\065\006\003\125\004\012\014\056\105\102\107\040\102\151\154\151
\305\237\151\155\040\124\145\153\156\157\154\157\152\151\154\145
\162\151\040\166\145\040\110\151\172\155\145\164\154\145\162\151
\040\101\056\305\236\056\061\013\060\011\006\003\125\004\006\023
\002\124\122
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```


\060\201\200\061\070\060\066\006\003\125\004\003\014\057\105\102
\107\040\105\154\145\153\164\162\157\156\151\153\040\123\145\162
\164\151\146\151\153\141\040\110\151\172\155\145\164\040\123\141
\304\237\154\141\171\304\261\143\304\261\163\304\261\061\067\060
\065\006\003\125\004\012\014\056\105\102\107\040\102\151\154\151
\305\237\151\155\040\124\145\153\156\157\154\157\152\151\154\145
\162\151\040\166\145\040\110\151\172\155\145\164\154\145\162\151
\040\101\056\305\236\056\061\013\060\011\006\003\125\004\006\023
\002\124\122

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\010\114\257\163\102\034\216\164\002

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\347\060\202\003\317\240\003\002\001\002\002\010\114
\257\163\102\034\216\164\002\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\201\200\061\070\060\066\006\003\125
\004\003\014\057\105\102\107\040\105\154\145\153\164\162\157\156
\151\153\040\123\145\162\164\151\146\151\153\141\040\110\151\172
\155\145\164\040\123\141\304\237\154\141\171\304\261\143\304\261
\163\304\261\061\067\060\065\006\003\125\004\012\014\056\105\102
\107\040\102\151\154\151\305\237\151\155\040\124\145\153\156\157
\154\157\152\151\154\145\162\151\040\166\145\040\110\151\172\155
\145\164\154\145\162\151\040\101\056\305\236\056\061\013\060\011
\006\003\125\004\006\023\002\124\122\060\036\027\015\060\066\060
\070\061\067\060\060\062\061\060\071\132\027\015\061\066\060\070
\061\064\060\060\063\061\060\071\132\060\201\200\061\070\060\066
\006\003\125\004\003\014\057\105\102\107\040\105\154\145\153\164
\162\157\156\151\153\040\123\145\162\164\151\146\151\153\141\040
\110\151\172\155\145\164\040\123\141\304\237\154\141\171\304\261
\143\304\261\163\304\261\061\067\060\065\006\003\125\004\012\014
\056\105\102\107\040\102\151\154\151\305\237\151\155\040\124\145
\153\156\157\154\157\152\151\154\145\162\151\040\166\145\040\110
\151\172\155\145\164\154\145\162\151\040\101\056\305\236\056\061
\013\060\011\006\003\125\004\006\023\002\124\122\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\356\240\204
\141\320\072\152\146\020\062\330\061\070\177\247\247\345\375\241
\341\373\227\167\270\161\226\350\023\226\106\203\117\266\362\137
\162\126\156\023\140\245\001\221\342\133\305\315\127\037\167\143
\121\377\057\075\333\271\077\252\251\065\347\171\320\365\320\044
\266\041\352\353\043\224\376\051\277\373\211\221\014\144\232\005
\112\053\314\014\356\361\075\233\202\151\244\114\370\232\157\347
\042\332\020\272\137\222\374\030\047\012\250\252\104\372\056\054
\264\373\106\232\010\003\203\162\253\210\344\152\162\311\345\145
\037\156\052\017\235\263\350\073\344\014\156\172\332\127\375\327
\353\171\213\136\040\006\323\166\013\154\002\225\243\226\344\313

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CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "EBG Elektronik Sertifika Hizmet Salaycs"

Issuer: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A...,CN=EBG Elektronik Sertifika Hizmet Salaycs

Serial Number:4c:af:73:42:1c:8e:74:02

Subject: C=TR,O=EBG Biliim Teknolojileri ve Hizmetleri A...,CN=EBG Elektronik Sertifika Hizmet Salaycs

Not Valid Before: Thu Aug 17 00:21:09 2006

Not Valid After: Sun Aug 14 00:31:09 2016

Fingerprint (MD5): 2c:20:26:9d:cb:1a:4a:00:85:b5:b7:5a:ae:c2:01:37

Fingerprint (SHA1): 8c:96:ba:eb:dd:2b:07:07:48:ee:30:32:66:a0:f3:98:6e:7c:ae:58

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "EBG Elektronik Sertifika Hizmet Salaycs"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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CKA_ISSUER MULTILINE_OCTAL

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CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "VAS Latvijas Pasts SSI(RCA)"

Issuer: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -
Vien.reg.Nr.40003052790,C=LV

Serial Number:63:06:86:a7:c5:37:65:a5:43:90:a8:6a:58:cc:d4:32

Subject: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas
pakalpojumi,O=VAS Latvijas Pasts - Vien.reg.Nr.40003052790,C=LV

Not Valid Before: Wed Sep 13 09:22:10 2006

Not Valid After: Fri Sep 13 09:27:57 2024

Fingerprint (MD5): fd:49:be:5b:18:5a:25:ec:f9:c3:54:85:10:40:e8:d4

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CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "VAS Latvijas Pasts SSI(RCA)"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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CKA_ID

UTF8 "0"

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\167\167\143\025\123\162\204\372\244\217\007\067\206\041\175\120
\372\075\152\067\333\221\016\067\263\375\316\013\312\173\141\320
\234\164\234\175\070\150\155\351\173\035\326\361\052\264\357\073
\140\122\167\005\346\002\302\137\214\133\274\360\175\267\163\307
\221\153\262\052\263\143\243\064\325\253\255\045\161\107\377\032
\076\172\266\215\225\166\303\356\246\315\003\011\154\356\105\147
\230\317\231\110\166\301\316\212\164\232\150\122\001\064\042\310
\355\342\024\013\204\275\156\020\214\261\162\233\276\350\010\327
\127\325\177\352\264\001\075\116\344\342\350\147\347\214\176\351
\347\102\021\357\225\106\310\221\326\276\047\027\200\031\064\230
\347\306\337\036\374\041\137\236\206\075\274\176\360\234\275\162
\236\364\107\202\133\161\147\363\372\334\124\114\250\134\330\131
\307\320\007\016\023\063\047\274\364\151\360\153\041

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "VAS Latvijas Pasts SSI(RCA)"
# Issuer: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -
Vien.reg.Nr.40003052790,C=LV
# Serial Number:63:06:86:a7:c5:37:65:a5:43:90:a8:6a:58:cc:d4:32
# Subject: CN=VAS Latvijas Pasts SSI(RCA),OU=Sertifikācijas pakalpojumi,O=VAS Latvijas Pasts -
Vien.reg.Nr.40003052790,C=LV
# Not Valid Before: Wed Sep 13 09:22:10 2006
# Not Valid After: Fri Sep 13 09:27:57 2024
# Fingerprint (MD5): fd:49:be:5b:18:5a:25:ec:f9:c3:54:85:10:40:e8:d4
# Fingerprint (SHA1): 08:64:18:e9:06:ce:e8:9c:23:53:b6:e2:7f:bd:9e:74:39:f7:63:16
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VAS Latvijas Pasts SSI(RCA)"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\010\144\030\351\006\316\350\234\043\123\266\342\177\275\236\164
\071\367\143\026
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\375\111\276\133\030\132\045\354\371\303\124\205\020\100\350\324
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\114\126
\061\065\060\063\006\003\125\004\012\023\054\126\101\123\040\114
\141\164\166\151\152\141\163\040\120\141\163\164\163\040\055\040
\126\151\145\156\056\162\145\147\056\116\162\056\064\060\060\060
\063\060\065\062\067\071\060\061\043\060\041\006\003\125\004\013
\023\032\123\145\162\164\151\146\151\153\141\143\151\152\141\163
\040\160\141\153\141\154\160\157\152\165\155\151\061\044\060\042
\006\003\125\004\003\023\033\126\101\123\040\114\141\164\166\151
\152\141\163\040\120\141\163\164\163\040\123\123\111\050\122\103
\101\051
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\143\006\206\247\305\067\145\245\103\220\250\152\130\314
\324\062
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST
CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ANCERT Certificados CGN"
```



```
# Issuer: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES
# Serial Number:44:74:ec:c8:6c:72:1e:58:dd:b8:2c:7e:f4:fc:95
# Subject: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES
# Not Valid Before: Wed Feb 11 17:27:12 2004
# Not Valid After: Sun Feb 11 17:27:12 2024
# Fingerprint (MD5): 1c:4b:e2:c6:2d:b9:ac:31:14:f4:40:07:69:cb:1f:40
# Fingerprint (SHA1): 11:c5:b5:f7:55:52:b0:11:66:9c:2e:97:17:de:6d:9b:ff:5f:a8:10
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados CGN"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145
\162\164\151\146\151\143\141\144\157\163\040\103\107\116
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145
\162\164\151\146\151\143\141\144\157\163\040\103\107\116
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\104\164\354\310\154\162\036\130\335\270\054\176\364\374
\225
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\052\060\202\004\022\240\003\002\001\002\002\017\104
\164\354\310\154\162\036\130\335\270\054\176\364\374\225\060\015
\006\011\052\206\110\206\367\015\001\001\005\005\000\060\174\061
\013\060\011\006\003\125\004\006\023\002\105\123\061\113\060\111
\006\003\125\004\012\023\102\101\147\145\156\143\151\141\040\116
```

\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\157\156\040\123\056\114\056\040\125\156
\151\160\145\162\163\157\156\141\154\040\055\040\103\111\106\040
\102\070\063\063\071\065\071\070\070\061\040\060\036\006\003\125
\004\003\023\027\101\116\103\105\122\124\040\103\145\162\164\151
\146\151\143\141\144\157\163\040\103\107\116\060\036\027\015\060
\064\060\062\061\061\061\067\062\067\061\062\132\027\015\062\064
\060\062\061\061\061\067\062\067\061\062\132\060\174\061\013\060
\011\006\003\125\004\006\023\002\105\123\061\113\060\111\006\003
\125\004\012\023\102\101\147\145\156\143\151\141\040\116\157\164
\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\157\156\040\123\056\114\056\040\125\156\151\160
\145\162\163\157\156\141\154\040\055\040\103\111\106\040\102\070
\063\063\071\065\071\070\070\061\040\060\036\006\003\125\004\003
\023\027\101\116\103\105\122\124\040\103\145\162\164\151\146\151
\143\141\144\157\163\040\103\107\116\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\220\165\077\077\014\254
\312\324\174\304\110\247\030\273\072\273\241\273\325\173\337\213
\031\344\202\104\373\145\354\266\022\141\076\151\042\031\142\065
\044\266\325\020\006\251\105\152\044\052\365\047\214\170\074\310
\271\363\005\154\305\002\003\322\116\200\144\354\206\253\170\224
\042\002\000\265\150\233\324\345\125\137\340\310\200\060\347\013
\277\153\327\004\216\116\171\230\160\114\034\046\271\263\250\352
\360\021\242\271\212\123\002\046\165\022\211\341\373\210\116\131
\172\000\321\202\330\026\256\345\266\274\225\045\140\100\167\045
\033\236\357\215\344\375\360\117\063\061\045\277\356\172\012\124
\360\220\070\147\022\173\245\140\332\014\001\211\232\166\207\056
\365\033\103\173\345\347\046\112\373\025\142\253\105\033\173\325
\012\245\115\154\115\253\237\050\110\204\341\203\165\270\030\160
\125\123\333\320\337\051\220\257\071\306\027\225\301\224\305\136
\331\145\137\135\377\156\026\225\230\041\237\136\115\360\315\061
\071\041\003\027\015\221\037\241\125\231\101\354\125\311\273\075
\231\134\233\305\177\321\034\136\352\123\002\003\001\000\001\243
\202\001\247\060\202\001\243\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\202\001\040\006\003\125\035
\040\004\202\001\027\060\202\001\023\060\202\001\017\006\011\053
\006\001\004\001\201\223\150\004\060\202\001\000\060\045\006\010
\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072\057
\057\167\167\167\056\141\156\143\145\162\164\056\143\157\155\057
\143\160\163\060\201\326\006\010\053\006\001\005\005\007\002\002
\060\201\311\060\015\026\006\101\116\103\105\122\124\060\003\002
\001\001\032\201\267\101\147\145\156\143\151\141\040\116\157\164
\141\162\151\141\154\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\157\156\056\040\114\141\040\144\145\143\154\141
\162\141\143\151\157\156\040\144\145\040\160\162\141\143\164\151
\143\141\163\040\144\145\040\143\145\162\164\151\146\151\141\143
\151\157\156\040\161\165\145\040\162\151\147\145\040\145\154\040

\146\165\156\143\151\157\156\141\155\151\145\156\164\157\040\144
\145\040\154\141\040\160\162\145\163\145\156\164\145\040\141\165
\164\157\162\151\144\141\144\040\163\145\040\145\156\143\165\145
\156\164\162\141\040\144\151\163\160\157\156\151\142\154\145\040
\145\156\040\150\164\164\160\072\057\057\167\167\167\056\141\156
\143\145\162\164\056\143\157\155\057\143\160\163\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\206\060\034\006\003
\125\035\021\004\025\060\023\201\021\141\156\143\145\162\164\100
\141\156\143\145\162\164\056\143\157\155\060\037\006\003\125\035
\043\004\030\060\026\200\024\354\127\237\310\166\042\157\314\072
\256\133\360\055\241\142\130\321\215\002\314\060\035\006\003\125
\035\016\004\026\004\024\354\127\237\310\166\042\157\314\072\256
\133\360\055\241\142\130\321\215\002\314\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\213\075
\337\334\066\054\177\047\234\374\265\130\123\161\012\022\135\020
\144\121\161\265\112\126\364\136\104\147\036\357\035\262\361\244
\121\074\147\154\054\145\226\172\241\022\243\257\013\010\067\016
\231\326\156\050\207\013\142\253\116\170\116\162\201\233\337\021
\117\211\140\310\121\246\033\006\011\161\163\174\067\267\034\070
\067\232\371\207\341\357\241\356\177\327\300\352\071\024\372\174
\157\013\371\206\312\346\305\167\151\240\237\215\051\243\167\156
\305\314\332\366\335\006\172\323\151\146\076\140\073\343\062\337
\256\360\033\236\052\235\314\204\337\032\020\107\355\245\126\226
\102\067\265\055\162\015\101\022\223\272\062\210\104\310\256\011
\304\275\200\355\375\140\017\162\262\266\144\366\143\040\062\160
\167\207\056\063\056\237\065\310\137\250\222\126\267\377\044\072
\054\135\362\046\005\150\031\362\121\147\317\337\122\011\351\202
\004\172\153\202\247\177\345\322\251\164\153\030\046\310\272\324
\325\036\245\113\073\046\301\235\042\341\373\022\275\325\142\106
\325\327\135\322\335\303\374\141\015\060\005\117\005\213

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ANCERT Certificados CGN"

Issuer: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF B83395988,C=ES

Serial Number:44:74:ec:c8:6c:72:1e:58:dd:b8:2c:7e:f4:fc:95

Subject: CN=ANCERT Certificados CGN,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF B83395988,C=ES

Not Valid Before: Wed Feb 11 17:27:12 2004

Not Valid After: Sun Feb 11 17:27:12 2024

Fingerprint (MD5): 1c:4b:e2:c6:2d:b9:ac:31:14:f4:40:07:69:cb:1f:40

Fingerprint (SHA1): 11:c5:b5:f7:55:52:b0:11:66:9c:2e:97:17:de:6d:9b:ff:5f:a8:10

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados CGN"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\021\305\265\367\125\122\260\021\146\234\056\227\027\336\155\233
\377\137\250\020
END
```

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\034\113\342\306\055\271\254\061\024\364\100\007\151\313\037\100
END
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103
\111\106\040\102\070\063\063\071\065\071\070\070\061\040\060\036
\006\003\125\004\003\023\027\101\116\103\105\122\124\040\103\145
\162\164\151\146\151\143\141\144\157\163\040\103\107\116
END
```

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\104\164\354\310\154\162\036\130\335\270\054\176\364\374
\225
END
```

```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ANCERT Certificados Notariales"
# Issuer: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES
# Serial Number:f4:cf:89:ea:dd:a4:c6:3e:91:ad:48:0e:2d:22:36:84
# Subject: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES
# Not Valid Before: Wed Feb 11 15:58:30 2004
# Not Valid After:
Sun Feb 11 15:58:26 2024
# Fingerprint (MD5): 45:f7:50:11:4e:c5:ad:bd:53:68:86:63:ec:7b:6a:e1
# Fingerprint (SHA1): c0:9a:b0:c8:ad:71:14:71:4e:d5:e2:1a:5a:27:6a:dc:d5:e7:ef:cb
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANCERT Certificados Notariales"
```

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060
\045\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103
\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141
\162\151\141\154\145\163

END

CKA_ID UTF8 "0"

CKA_ISSUER

MULTILINE_OCTAL

\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060
\045\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103
\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141
\162\151\141\154\145\163

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\364\317\211\352\335\244\306\076\221\255\110\016\055
\042\066\204

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\074\060\202\004\044\240\003\002\001\002\002\021\000
\364\317\211\352\335\244\306\076\221\255\110\016\055\042\066\204
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151
\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145
\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056
\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103
\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060\045
\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103\145
\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141\162
\151\141\154\145\163\060\036\027\015\060\064\060\062\061\061\061
\065\065\070\063\060\132\027\015\062\064\060\062\061\061\061\065
\065\070\062\066\132\060\201\203\061\013\060\011\006\003\125\004
\006\023\002\105\123\061\113\060\111\006\003\125\004\012\023\102
\101\147\145\156\143\151\141\040\116\157\164\141\162\151\141\154
\040\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157
\156\040\123\056\114\056\040\125\156\151\160\145\162\163\157\156

\141\154\040\055\040\103\111\106\040\102\070\063\063\071\065\071
\070\070\061\047\060\045\006\003\125\004\003\023\036\101\116\103
\105\122\124\040\103\145\162\164\151\146\151\143\141\144\157\163
\040\116\157\164\141\162\151\141\154\145\163\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\360\221\017\320
\147\055\051\262\143\115\037\065\171\366\145\153\271\363\363\265
\130\223\047\144\117\247\325\133\202\005\162\233\177\035\256\010
\322\214\320\321\311\140\260\231\031\065\326\031\306\000\071\151
\175\042\357\164\042\203\264\176\352\020\213\076\063\034\341\335
\144\066\051\363\122\112\156\101\303\276\121\014\037\143\270\277
\215\251\077\061\061\073\273\361\066\104\074\047\145\024\171\165
\346\020\244\074\130\033\313\123\142\022\365\207\132\106\242\171
\243\140\343\026\250\336\204\246\372\345\314\304\020\062\366\102
\332\107\115\030\075\346\172\017\053\016\143\377\147\175\103\325
\164\026\220\064\264\017\316\046\163\041\301\112\332\144\344\117
\343\043\265\331\366\253\267\112\177\226\341\313\107\375\006\103
\321\224\064\151\012\376\075\350\146\252\046\014\325\143\071\006
\160\223\255\174\263\344\107\301\073\107\216\151\227\014\221\240
\114\007\217\311\200\114\256\160\223\150\217\241\303\042\302\361
\165\233\050\175\222\222\125\072\250\131\031\354\022\061\034\357
\235\027\334\271\100\011\133\364\055\023\046\163\002\003\001\000
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\004\025\060\023\201\021\141\156\143\145\162\164\100\141\156\143
\145\162\164\056\143\157\155\060\037\006\003\125\035\043\004\030
\060\026\200\024\204\367\372\162\136\210\144\146\035\050\214\260
\167\275\014\152\237\114\115\142\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\202\001\040\006\003\125
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\053\006\001\004\001\201\223\150\001\060\202\001\000\060\045\006
\010\053\006\001\005\005\007\002\001\026\031\150\164\164\160\072
\057\057\167\167\167\056\141\156\143\145\162\164\056\143\157\155
\057\143\160\163\060\201\326\006\010\053\006\001\005\005\007\002
\002\060\201\311\060\015\026\006\101\116\103\105\122\124\060\003
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\141\162\141\143\151\157\156\040\144\145\040\160\162\141\143\164
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\143\151\157\156\040\161\165\145\040\162\151\147\145\040\145\154
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\040\145\156\040\150\164\164\160\072\057\057\167\167\167\056\141
\156\143\145\162\164\056\143\157\155\057\143\160\163\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035\006
\003\125\035\016\004\026\004\024\204\367\372\162\136\210\144\146

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\035\050\214\260\167\275\014\152\237\114\115\142\060\015\006\011
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000
\057\370\345\330\063\245\302\224\156\136\300\361\356\241\114\012
\255\206\017\300\063\335\236\322\331\233\356\305\053\205\051\166
\254\245\022\123\223\035\252\007\354\351\071\144\013\150\360\165
\044\351\321\206\214\234\123\152\353\025\241\011\267\031\007\271
\235\217\002\262\033\111\160\302\143\164\335\013\252\376\007\306
\067\126\306\203\376\300\117\034\314\070\252\375\356\125\230\211
\134\302\123\255\040\207\272\026\144\122\141\354\301\237\273\324
\142\321\052\310\135\360\053\370\332\022\316\043\313\261\314\301
\322\012\275\374\300\200\116\125\111\372\211\330\144\243\112\312
\356\213\327\345\355\222\373\140\342\342\052\317\055\050\076\246
\377\200\234\145\314\022\236\245\034\164\131\220\245\207\177\147
\025\200\020\300\241\321\250\060\354\241\002\221\212\132\323\043
\027\223\132\107\041\171\352\063\172\017\177\070\065\232\312\126
\270\277\144\272\247\260\265\121\035\026\236\216\211\175\070\072
\313\204\115\007\230\330\345\341\214\005\152\245\067\014\326\171
\051\076\361\102\304\266\367\352\031\240\141\340\002\116\277\022
END
```

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ANCERT Certificados Notariales"

Issuer: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES

Serial Number:f4:cf:89:ea:dd:a4:c6:3e:91:ad:48:0e:2d:22:36:84

Subject: CN=ANCERT Certificados Notariales,O=Agencia Notarial de Certificacion S.L. Unipersonal - CIF
B83395988,C=ES

Not Valid Before: Wed Feb 11 15:58:30 2004

Not Valid After: Sun Feb 11 15:58:26 2024

Fingerprint (MD5): 45:f7:50:11:4e:c5:ad:bd:53:68:86:63:ec:7b:6a:e1

Fingerprint (SHA1): c0:9a:b0:c8:ad:71:14:71:4e:d5:e2:1a:5a:27:6a:dc:d5:e7:ef:cb

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN

CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ANCERT Certificados Notariales"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\300\232\260\310\255\161\024\161\116\325\342\032\132\047\152\334
\325\347\357\313
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\105\367\120\021\116\305\255\275\123\150\206\143\354\173\152\341
```

END

```
CKA_ISSUER MULTILINE_OCTAL
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\047\060
\045\006\003\125\004\003\023\036\101\116\103\105\122\124\040\103
\145\162\164\151\146\151\143\141\144\157\163\040\116\157\164\141
\162\151\141\154\145\163
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\021\000\364\317\211\352\335\244\306\076\221\255\110\016\055
\042\066\204
```

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "ANCERT Corporaciones de Derecho Publico"

Issuer: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal -
CIF B83395988,C=ES

Serial Number:3f:b2:e5:f2:d1:7c:8b:18:64:56:62:a9:39:81:7f:a7

Subject: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal
- CIF B83395988,C=ES

Not Valid Before: Wed Feb 11 17:22:45 2004

Not Valid After: Sun Feb 11 17:22:45 2024

Fingerprint (MD5): 20:6b:d6:8b:4a:8f:48:ab:e4:88:09:0d:e5:65:1a:50

Fingerprint (SHA1): 0c:fd:83:db:ae:44:b9:a0:c8:f6:76:f3:b5:70:65:0b:94:b6:9d:bf

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ANCERT Corporaciones de Derecho Publico"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\214\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\060\060
\056\006\003\125\004\003\023\047\101\116\103\105\122\124\040\103
\157\162\160\157\162\141\143\151\157\156\145\163\040\144\145\040
```


\104\145\162\145\143\150\157\040\120\165\142\154\151\143\157
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\214\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\060\060
\056\006\003\125\004\003\023\047\101\116\103\105\122\124\040\103
\157\162\160\157\162\141\143\151\157\156\145\163\040\144\145\040
\104\145\162\145\143\150\157\040\120\165\142\154\151\143\157
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\077\262\345\362\321\174\213\030\144\126\142\251\071\201
\177\247
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\115\060\202\004\065\240\003\002\001\002\002\020\077
\262\345\362\321\174\213\030\144\126\142\251\071\201\177\247\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\214\061\013\060\011\006\003\125\004\006\023\002\105\123\061\113
\060\111\006\003\125\004\012\023\102\101\147\145\156\143\151\141
\040\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\156\040\123\056\114\056\040
\125\156\151\160\145\162\163\157\156\141\154\040\055\040\103\111
\106\040\102\070\063\063\071\065\071\070\070\061\060\060\056\006
\003\125\004\003\023\047\101\116\103\105\122\124\040\103\157\162
\160\157\162\141\143\151\157\156\145\163\040\144\145\040\104\145
\162\145\143\150\157\040\120\165\142\154\151\143\157\060\036\027
\015\060\064\060\062\061\061\061\067\062\062\064\065\132\027\015
\062\064\060\062\061\061\061\067\062\062\064\065\132\060\201\214
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\113\060
\111\006\003\125\004\012\023\102\101\147\145\156\143\151\141\040
\116\157\164\141\162\151\141\154\040\144\145\040\103\145\162\164
\151\146\151\143\141\143\151\157\156\040\123\056\114\056\040\125
\156\151\160\145\162\163\157\156\141\154\040\055\040\103\111\106
\040\102\070\063\063\071\065\071\070\070\061\060\060\056\006\003
\125\004\003\023\047\101\116\103\105\122\124\040\103\157\162\160
\157\162\141\143\151\157\156\145\163\040\144\145\040\104\145\162
\145\143\150\157\040\120\165\142\154\151\143\157\060\202\001\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\001\017\000\060\202\001\012\002\202\001\001\000\242\041\225
\207\334\212\353\326\172\220\250\150\065\375\027\374\164\072\124
\020\222\065\223\102\165\056\330\076\313\251\224\241\276\152\067
\077\122\272\244\173\332\204\231\026\171\116\000\150\324\037\023

\351\106\073\074\112\235\203\072\330\041\357\302\362\100\105\341
\017\140\105\004\355\374\212\030\056\371\075\344\244\021\062\040
\216\072\267\356\226\100\025\032\231\351\041\235\162\254\315\037
\211\256\252\331\241\100\260\250\147\276\374\172\016\107\261\136
\274\370\060\152\216\067\237\005\102\354\054\303\246\033\213\253
\304\120\075\372\344\163\365\041\260\270\125\137\207\340\242\107
\070\057\100\137\117\154\253\224\044\126\343\114\217\176\220\351
\047\202\050\233\230\272\232\326\265\233\127\157\153\025\034\371
\273\160\051\175\074\367\023\250\321\161\361\260\376\210\105\161
\251\245\164\145\313\303\371\365\003\017\020\303\206\060\000\156
\301\300\046\242\210\376\041\307\062\075\273\306\173\033\267\233
\212\263\372\261\174\161\331\001\247\102\220\252\057\230\220\204
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\000\001\243\202\001\247\060\202\001\243\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\202\001\040\006
\003\125\035\040\004\202\001\027\060\202\001\023\060\202\001\017
\006\011\053\006\001\004\001\201\223\150\003\060\202\001\000\060
\045\006\010\053\006\001\005\005\007\002\001\026\031\150\164\164
\160\072\057\057\167\167\167\056\141\156\143\145\162\164\056\143
\157\155\057\143\160\163\060\201\326\006\010\053\006\001\005\005
\007\002\002\060\201\311\060\015\026\006\101\116\103\105\122\124
\060\003\002\001\001\032\201\267\101\147\145\156\143\151\141\040
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\151\146\151\143\141\143\151\157\156\056\040\114\141\040\144\145
\143\154\141\162\141\143\151\157\156\040\144\145\040\160\162\141
\143\164\151\143\141\163\040\144\145\040\143\145\162\164\151\146
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\157\040\144\145\040\154\141\040\160\162\145\163\145\156\164\145
\040\141\165\164\157\162\151\144\141\144\040\163\145\040\145\156
\143\165\145\156\164\162\141\040\144\151\163\160\157\156\151\142
\154\145\040\145\156\040\150\164\164\160\072\057\057\167\167\167
\056\141\156\143\145\162\164\056\143\157\155\057\143\160\163\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060
\034\006\003\125\035\021\004\025\060\023\201\021\141\156\143\145
\162\164\100\141\156\143\145\162\164\056\143\157\155\060\037\006
\003\125\035\043\004\030\060\026\200\024\214\114\036\067\014\261
\237\322\254\104\013\072\276\002\317\364\215\055\146\225\060\035
\006\003\125\035\016\004\026\004\024\214\114\036\067\014\261\237
\322\254\104\013\072\276\002\317\364\215\055\146\225\060\015\006
\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001
\000\107\164\300\224\221\342\245\373\230\122\104\223\154\304\300
\035\340\171\333\151\144\055\141\256\244\167\221\065\265\267\312
\227\252\300\261\206\365\033\150\153\252\130\262\174\077\347\003
\047\370\101\161\274\246\322\040\251\200\225\242\107\255\155\106
\164\255\204\233\330\157\251\365\271\057\155\233\300\335\231\207
\355\131\262\165\201\245\211\205\052\314\320\205\201\115\363\257
\167\336\214\301\050\232\102\254\005\207\014\064\234\161\207\375

```
\354\001\024\037\276\303\056\360\337\372\044\246\135\037\074\361
\242\013\121\210\001\256\022\207\244\265\135\161\262\337\357\015
\174\040\343\177\023\013\115\246\300\167\314\077\326\017\161\307
\161\114\056\036\372\031\006\145\311\255\126\154\167\215\106\077
\275\060\203\036\340\056\125\270\170\043\164\074\130\012\143\072
\115\201\173\157\065\160\256\266\045\331\366\044\376\043\306\332
\032\210\257\250\024\223\163\340\300\133\260\061\151\032\366\051
\137\126\267\032\012\302\371\013\352\002\301\063\021\142\152\174
\103\350\352\032\253\220\000\205\340\105\017\175\216\272\120\325
\306
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ANCERT Corporaciones de Derecho Publico"

Issuer: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal -
CIF B83395988,C=ES

Serial Number:3f:b2:e5:f2:d1:7c:8b:18:64:56:62:a9:39:81:7f:a7

Subject: CN=ANCERT Corporaciones de Derecho Publico,O=Agencia Notarial de Certificacion S.L. Unipersonal
- CIF B83395988,C=ES

Not Valid Before: Wed Feb 11 17:22:45 2004

Not Valid After: Sun Feb 11 17:22:45 2024

Fingerprint (MD5): 20:6b:d6:8b:4a:8f:48:ab:e4:88:09:0d:e5:65:1a:50

Fingerprint (SHA1): 0c:fd:83:db:ae:44:b9:a0:c8:f6:76:f3:b5:70:65:0b:94:b6:9d:bf

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL

UTF8 "ANCERT Corporaciones de Derecho Publico"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\014\375\203\333\256\104\271\240\310\366\166\363\265\160\145\013
\224\266\235\277
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\040\153\326\213\112\217\110\253\344\210\011\015\345\145\032\120
```

END

CKA_ISSUER MULTILINE_OCTAL

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\060\201\214\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\113\060\111\006\003\125\004\012\023\102\101\147\145\156\143
\151\141\040\116\157\164\141\162\151\141\154\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\156\040\123\056\114
\056\040\125\156\151\160\145\162\163\157\156\141\154\040\055\040
\103\111\106\040\102\070\063\063\071\065\071\070\070\061\060\060
\056\006\003\125\004\003\023\047\101\116\103\105\122\124\040\103
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\157\162\160\157\162\141\143\151\157\156\145\163\040\144\145\040

\104\145\162\145\143\150\157\040\120\165\142\154\151\143\157

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\077\262\345\362\321\174\213\030\144\126\142\251\071\201

\177\247

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "GLOBALTRUST"

Issuer: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT

Serial Number: 0 (0x0)

Subject: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT

Not Valid Before: Mon Aug 07 14:12:35 2006

Not Valid After: Thu Sep 18 14:12:35 2036

Fingerprint (MD5): df:0d:bc:7c:c8:36:b7:76:99:a1:ab:f0:d2:0f:89:6a

Fingerprint (SHA1): 34:2c:d9:d3:06:2d:a4:8c:34:69:65:29:7f:08:1e:bc:2e:f6:8f:dc

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GLOBALTRUST"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\162\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122

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\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040

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\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006

\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123

\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001

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END

CKA_ID

UTF8 "0"

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\151\141\156\040\123\157\143\151\145\164\171\040\146\157\162\040
\104\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061
\052\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114
\124\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006
\003\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123
\124\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001
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\163\164\056\151\156\146\157

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE

MULTILINE_OCTAL

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\017\060\015\006\003\125\004\007\023\006\126\151\145\156\156\141
\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164\162
\151\141\061\072\060\070\006\003\125\004\012\023\061\101\122\107
\105\040\104\101\124\105\116\040\055\040\101\165\163\164\162\151
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\141\164\141\040\120\162\157\164\145\143\164\151\157\156\061\052
\060\050\006\003\125\004\013\023\041\107\114\117\102\101\114\124
\122\125\123\124\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\061\024\060\022\006\003
\125\004\003\023\013\107\114\117\102\101\114\124\122\125\123\124
\061\044\060\042\006\011\052\206\110\206\367\015\001\011\001\026
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\164\056\151\156\146\157\060\036\027\015\063\066\060\071\061\070\061
\061\064\061\062\063\065\132\027\015\063\066\060\071\061\070\061
\064\061\062\063\065\132\060\201\324\061\013\060\011\006\003\125
\004\006\023\002\101\124\061\017\060\015\006\003\125\004\007\023
\006\126\151\145\156\156\141\061\020\060\016\006\003\125\004\010
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\145\061\024\060\022\006\003\125\004\003\023\013\107\114\117\102
\101\114\124\122\125\123\124\061\044\060\042\006\011\052\206\110
\206\367\015\001\011\001\026\025\151\156\146\157\100\147\154\157
\142\141\154\164\162\165\163\164\056\151\156\146\157\060\202\002
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\322\022
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\121\266\373\225\117\213\304\220\075\123\063\261\323\023\305\110
\342\245\277\365\364\003\204\017\234\170\161\366\222\227\361\133
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\225\075\151\303\176\302\254\304\012\066\162\172\133\246\320\367
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\001\026\175\363\351\341\044\363\010\041\271\272\254\135\236\307
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\134\110\254\022\074\131\362\152\317\200\110\341\366\000\147\170
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\231\006\276\362\347\236\244\155\213\073\153\014\201\356\264\157
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\054\363\356\217\333\173\150\327\020\104\051\255\354\253\120\131
\122\232\154\152\162\024\115\026\024\121\367\327\176\037\002\003
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\037\057\164\072\343\353\300\041\122\246\004\356\046\313\244\241
\201\332\244\201\327\060\201\324\061\013\060\011\006\003\125\004
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "GLOBALTRUST"

Issuer: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT

Serial Number: 0 (0x0)

Subject: 1.2.840.113549.1.9.1=info@globaltrust.info,CN=GLOBALTRUST,OU=GLOBALTRUST Certification Service,O=ARGE DATEN - Austrian Society for Data Protection,ST=Austria,L=Vienna,C=AT

Not Valid Before: Mon

Aug 07 14:12:35 2006

Not Valid After: Thu Sep 18 14:12:35 2036

Fingerprint (MD5): df:0d:bc:7c:c8:36:b7:76:99:a1:ab:f0:d2:0f:89:6a

Fingerprint (SHA1): 34:2c:d9:d3:06:2d:a4:8c:34:69:65:29:7f:08:1e:bc:2e:f6:8f:dc

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GLOBALTRUST"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\064\054\331\323\006\055\244\214\064\151\145\051\177\010\036\274
\056\366\217\334
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END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

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\337\015\274\174\310\066\267\166\231\241\253\360\322\017\211\152
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END

CKA_ISSUER MULTILINE_OCTAL

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\060\201\324\061\013\060\011\006\003\125\004\006\023\002\101\124
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\141\061\020\060\016\006\003\125\004\010\023\007\101\165\163\164
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END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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\002\001\000
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END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Certipost E-Trust TOP Root CA"

Issuer: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

Serial Number:04:00:00:00:00:01:05:52:64:c1:95

Subject: CN=Certipost

E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

Not Valid Before: Tue Jul 26 10:00:00 2005

Not Valid After: Sat Jul 26 10:00:00 2025

Fingerprint (MD5): b8:d3:12:03:4e:8c:0c:5a:47:c9:b6:c5:9e:5b:97:fd

Fingerprint (SHA1): 05:60:a2:c7:38:ff:98:d1:17:2a:94:fe:45:fb:8a:47:d6:65:37:1e

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certipost E-Trust TOP Root CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

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\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
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END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\013\004\000\000\000\000\001\005\122\144\301\225

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\314\060\202\002\264\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\301\225\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\123\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141
\056\057\156\056\166\056\061\046\060\044\006\003\125\004\003\023
\035\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165
\163\164\040\124\117\120\040\122\157\157\164\040\103\101\060\036
\027\015\060\065\060\067\062\066\061\060\060\060\060\060\132\027
\015\062\065\060\067\062\066\061\060\060\060\060\060\132\060\123
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\034\060
\032\006\003\125\004\012\023\023\103\145\162\164\151\160\157\163
\164\040\163\056\141\056\057\156\056\166\056\061\046\060\044\006
\003\125\004\003\023\035\103\145\162\164\151\160\157\163\164\040
\105\055\124\162\165\163\164\040\124\117\120\040\122\157\157\164
\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\245\324\113\100\326\373\361\065\030\073\242\260
\103\344\311\125\241\300\007\273\010\276\072\031\265\043\303\036
\235\263\010\112\364\103\113\351\301\031\140\220\337\204\327\130
\306\072\335\012\054\225\054\275\227\177\376\242\165\332\006\343
\253\233\154\321\270\317\104\206\301\122\140\267\334\076\073\260
\362\351\304\121\074\112\271\203\271\116\141\152\003\233\034\122
\200\072\120\264\040\262\333\323\262\306\124\177\313\140\233\310
\044\236\257\011\307\145\015\050\366\332\232\042\302\063\156\362
\363\045\324\244\371\226\365\157\252\074\153\334\101\060\345\346
\157\312\110\037\060\170\035\171\175\247\321\277\256\305\136\103
\371\306\057\203\166\233\064\112\244\050\130\053\250\210\205\104
\152\053\362\126\102\166\231\220\063\252\356\371\041\317\362\075
\371\167\204\313\335\051\204\304\324\212\052\244\071\134\076\371
\034\045\150\115\365\347\233\135\261\032\064\136\312\002\163\371
\010\304\014\155\136\335\022\052\345\173\305\066\170\122\235\062
\301\305\050\245\040\250\345\230\015\271\157\317\271\200\236\345
\276\271\233\375\002\003\001\000\001\243\201\240\060\201\235\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\113\336\276\005\061
\056\363\065\310\330\312\247\126\305\224\015\264\132\145\305\060
\110\006\003\125\035\040\004\101\060\077\060\075\006\011\003\220
\016\007\001\000\001\002\000\060\060\060\056\006\010\053\006\001
\005\005\007\002\001\026\042\150\164\164\160\072\057\057\167\167
\167\056\145\055\164\162\165\163\164\056\142\145\057\103\120\123
\057\121\116\143\145\162\164\163\040\060\021\006\011\140\206\110
\001\206\370\102\001\001\004\004\003\002\000\007\060\015\006\011

```
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000
\211\143\314\242\316\370\124\152\174\131\064\170\253\001\264\226
\055\052\041\156\100\055\137\320\226\042\231\203\005\034\345\044
\315\342\365\065\004\277\000\226\007\354\262\244\072\152\053\043
\076\311\017\312\023\035\270\044\226\011\046\330\074\052\201\316
\341\201\310\311\163\076\365\273\017\010\036\220\340\260\222\271
\322\072\227\120\340\006\216\344\202\060\074\140\040\267\244\356
\253\211\006\341\374\045\273\221\324\371\267\137\150\143\250\240
\150\206\153\247\354\222\313\042\372\120\133\023\130\047\256\053
\103\013\266\027\306\060\162\004\063\104\046\112\104\007\037\163
\240\203\101\051\340\222\006\274\325\001\352\376\274\257\161\353
\040\037\012\135\015\240\051\136\316\344\101\121\125\226\303\037
\264\061\245\243\363\123\352\377\302\234\206\162\317\066\114\126
\132\006\062\176\136\253\112\241\316\247\353\237\244\214\052\271
\044\213\270\265\363\006\115\246\312\175\231\373\366\125\352\256
\110\171\356\046\131\323\037\014\123\025\367\142\121\371\204\015
\226\154\136\261\010\346\131\010\053\046\051\012\301\203\100\163
END
```

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Certipost E-Trust TOP Root CA"

Issuer: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

Serial Number:04:00:00:00:00:01:05:52:64:c1:95

Subject: CN=Certipost E-Trust TOP Root CA,O=Certipost s.a./n.v.,C=BE

Not Valid Before: Tue Jul 26 10:00:00 2005

Not Valid After: Sat Jul 26 10:00:00 2025

Fingerprint (MD5): b8:d3:12:03:4e:8c:0c:5a:47:c9:b6:c5:9e:5b:97:fd

Fingerprint (SHA1): 05:60:a2:c7:38:ff:98:d1:17:2a:94:fe:45:fb:8a:47:d6:65:37:1e

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certipost E-Trust TOP Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\005\140\242\307\070\377\230\321\027\052\224\376\105\373\212\107
\326\145\067\036
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\270\323\022\003\116\214\014\132\107\311\266\305\236\133\227\375
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
```

```
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\046\060
\044\006\003\125\004\003\023\035\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\124\117\120\040\122\157
\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\013\004\000\000\000\000\001\005\122\144\301\225
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST

CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Certipost E-Trust Primary Qualified CA"

Issuer: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE

Serial Number:04:00:00:00:00:01:05:52:64:c4:25

Subject: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE

Not Valid Before: Tue Jul 26 10:00:00 2005

Not Valid After: Sun Jul 26 10:00:00 2020

Fingerprint (MD5): 10:0e:ad:f3:5c:84:1d:8e:03:5f:2d:c9:39:37:f5:52

Fingerprint (SHA1): 74:2c:df:15:94:04:9c:bf:17:a2:04:6c:c6:39:bb:38:88:e0:2e:33

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certipost E-Trust Primary Qualified CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\013\004\000\000\000\000\000\001\005\122\144\304\045

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\336\060\202\002\306\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\304\045\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\134\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141
\056\057\156\056\166\056\061\057\060\055\006\003\125\004\003\023
\046\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165
\163\164\040\120\162\151\155\141\162\171\040\121\165\141\154\151
\146\151\145\144\040\103\101\060\036\027\015\060\065\060\067\062
\066\061\060\060\060\060\060\132\027\015\062\060\060\067\062\066
\061\060\060\060\060\060\132\060\134\061\013\060\011\006\003\125
\004\006\023\002\102\105\061\034\060\032\006\003\125\004\012\023
\023\103\145\162\164\151\160\157\163\164\040\163\056\141\056\057
\156\056\166\056\061\057\060\055\006\003\125\004\003\023\046\103
\145\162\164\151\160\157\163\164\040\105\055\124\162\165\163\164
\040\120\162\151\155\141\162\171\040\121\165\141\154\151\146\151
\145\144\040\103\101\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\256\040\322\170\333\232\240\162\234\004
\122\045\054\155\122\330\327\047\211\063\240\341\262\325\373\060
\165\153\055\177\034\147\216\016\347\037\022\337\027\171\030\273
\264\033\157\370\075\165\033\236\147\067\360\361\372\017\165\355
\206\235\003\004\241\050\160\055\074\262\153\240\163\121\343\065
\251\164\245\010\076\224\205\047\066\052\252\162\144\374\167\356
\166\224\034\162\353\277\062\307\167\003\152\045\202\011\005\257
\137\140\074\177\254\033\274\222\350\074\164\131\316\361\174\124
\055\070\256\226\360\254\157\241\063\014\041\132\001\272\043\040
\133\240\206\002\325\123\334\111\037\250\062\263\257\073\106\073
\266\357\237\071\263\070\013\347\172\212\366\050\371\247\157\120
\051\310\171\130\213\111\322\245\330\205\176\126\361\151\025\170
\104\021\065\327\245\124\076\253\146\045\322\333\343\030\361\056
\053\342\161\043\011\067\144\103\102\164\062\226\167\336\227\242
\351\226\206\234\045\104\011\324\001\235\121\176\063\267\011\104
\345\200\227\015\144\133\167\030\227\245\113\251\236\020\235\207
\372\126\247\317\012\175\002\003\001\000\001\243\201\240\060\201
\235\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\035\006\003\125\035\016\004\026\004\024\360\170\371
\007\167\020\273\334\036\241\256\171\373\060\020\333\306\064\370
\027\060\110\006\003\125\035\040\004\101\060\077\060\075\006\011
\003\220\016\007\001\000\001\002\000\060\060\060\056\006\010\053
\006\001\005\005\007\002\001\026\042\150\164\164\160\072\057\057
\167\167\167\056\145\055\164\162\165\163\164\056\142\145\057\103
\120\123\057\121\116\143\145\162\164\163\040\060\021\006\011\140
\206\110\001\206\370\102\001\001\004\004\003\002\000\007\060\015

\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202\001
\001\000\154\341\330\137\164\130\351\160\111\326\312\015\054\130
\332\312\144\266\121\117\303\006\144\001\351\212\163\035\236\317
\106\170\277\073\205\206\342\075\112\030\224\052\201\167\157\202
\370\157\364\356\042\374\235\030\041\162\140\273\030\200\202\225
\373\371\367\225\044\201\146\301\265\303\265\322\266\166\213\073
\201\134\270\241\016\053\001\024\213\200\011\100\356\370\140\114
\031\344\027\315\047\001\263\143\022\005\244\010\311\264\277\236
\120\116\265\336\017\222\063\146\165\320\075\347\043\174\352\045
\161\174\376\076\056\066\171\241\345\051\120\043\065\005\225\170
\273\237\171\144\334\127\110\047\054\342\134\063\315\302\273\176
\150\167\247\057\243\111\027\162\341\000\204\153\175\172\257\071
\013\054\325\330\127\144\062\154\204\012\152\166\072\323\254\315
\235\261\347\067\334\354\014\057\305\127\140\337\210\365\103\261
\001\144\046\264\047\202\020\262\243\120\357\227\346\177\277\221
\207\263\333\220\251\052\342\172\064\154\163\111\364\350\215\056
\153\212\335\241\212\177\143\320\277\130\036\257\314\077\222\120
\055\321

END

CKA_NSS_Mozilla_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL

CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Certipost E-Trust Primary Qualified CA"

Issuer: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE

Serial Number:04:00:00:00:00:01:05:52:64:c4:25

Subject: CN=Certipost E-Trust Primary Qualified CA,O=Certipost s.a./n.v.,C=BE

Not Valid Before: Tue Jul 26 10:00:00 2005

Not Valid After: Sun Jul 26 10:00:00 2020

Fingerprint (MD5): 10:0e:ad:f3:5c:84:1d:8e:03:5f:2d:c9:39:37:f5:52

Fingerprint (SHA1): 74:2c:df:15:94:04:9c:bf:17:a2:04:6c:c6:39:bb:38:88:e0:2e:33

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certipost E-Trust Primary Qualified CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\164\054\337\025\224\004\234\277\027\242\004\154\306\071\273\070
\210\340\056\063

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\020\016\255\363\134\204\035\216\003\137\055\311\071\067\365\122

END

CKA_ISSUER

```
MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\057\060
\055\006\003\125\004\003\023\046\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\121\165\141\154\151\146\151\145\144\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\304\045
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Certipost E-Trust Primary Normalised CA"
# Issuer: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE
# Serial Number:04:00:00:00:00:01:05:52:64:c7:61
# Subject: CN=Certipost E-Trust Primary
Normalised CA,O=Certipost s.a./n.v.,C=BE
# Not Valid Before: Tue Jul 26 10:00:00 2005
# Not Valid After: Sun Jul 26 10:00:00 2020
# Fingerprint (MD5): 21:ef:b8:50:40:39:3f:75:6f:27:fe:e3:ea:58:70:eb
# Fingerprint (SHA1): a5:9c:9b:10:ec:73:57:51:5a:bb:66:0c:4d:94:f7:3b:9e:6e:92:72
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certipost E-Trust Primary Normalised CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

```
\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\013\004\000\000\000\000\001\005\122\144\307\141

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\340\060\202\002\310\240\003\002\001\002\002\013\004
\000\000\000\000\001\005\122\144\307\141\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\135\061\013\060\011\006
\003\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004
\012\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141
\056\057\156\056\166\056\061\060\060\056\006\003\125\004\003\023
\047\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165
\163\164\040\120\162\151\155\141\162\171\040\116\157\162\155\141
\154\151\163\145\144\040\103\101\060\036\027\015\060\065\060\067
\062\066\061\060\060\060\060\060\132\027\015\062\060\060\067\062
\066\061\060\060\060\060\060\132\060\135\061\013\060\011\006\003
\125\004\006\023\002\102\105\061\034\060\032\006\003\125\004\012
\023\023\103\145\162\164\151\160\157\163\164\040\163\056\141\056
\057\156\056\166\056\061\060\060\056\006\003\125\004\003\023\047
\103\145\162\164\151\160\157\163\164\040\105\055\124\162\165\163
\164\040\120\162\151\155\141\162\171\040\116\157\162\155\141\154
\151\163\145\144\040\103\101\060\202\001\042\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060
\202\001\012\002\202\001\001\000\325\263\252\122\204\172\027\223
\042\017\270\004\030\312\311\362\202\052\254\025\013\247\120\161
\266\114\045\153\367\377\001\252\127\132\167\116\136\023\024\015
\125\362\036\361\205\315\205\327\202\034\014\332\011\053\275\375
\274\236\376\155\211\115\242\002\044\346\121\352\067\177\061\106
\132\173\232\166\263\056\240\135\137\344\370\231\012\007\276\356
\222\046\022\311\173\347\135\154\320\203\107\016\300\214\247\321
\171\127\300\013\031\234\233\236\103\305\116\221\045\316\210\053
\155\171\331\171\212\326\146\116\042\303\032\105\116\357\310\260
\142\046\116\046\124\120\237\014\157\263\153\314\174\237\177\336
\017\015\265\217\303\153\324\341\302\373\273\126\120\252\214\075
\217\000\213\074\374\110\027\152\322\132\363\165\155\145\201\275
\106\135\237\242\142\123\256\316\363\251\344\221\053\132\046\303
\171\146\321\246\123\146\065\034\006\161\261\356\231\016\304\373
\130\022\254\042\106\055\342\042\222\333\341\074\277\273\376\206
\347\223\064\163\317\170\151\323\313\336\371\014\262\150\332\311
\212\012\140\124\304\363\126\143\002\003\001\000\001\243\201\240
\060\201\235\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\110\006\003\125\035\040\004\101\060\077\060
\075\006\011\003\220\016\007\001\000\001\002\000\060\060\060\056
\006\010\053\006\001\005\005\007\002\001\026\042\150\164\164\160
\072\057\057\167\167\167\056\145\055\164\162\165\163\164\056\142
\145\057\103\120\123\057\121\116\143\145\162\164\163\040\060\035


```
\006\003\125\035\016\004\026\004\024\021\362\013\226\322\063\070
\201\127\130\023\375\100\244\021\157\116\231\372\147\060\021\006
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\065\153\117\336\235\363\003\266\035\310\274\215
\347\136\152\236\251\351\355\242\053\227\352\257\321\341\106\323
\002\111\175\304\122\205\353\272\366\323\277\071\142\030\235\223
\111\275\170\003\277\323\136\025\335\357\047\034\341\273\105\001
\042\201\000\115\072\340\205\312\132\062\003\314\040\217\257\357
\301\333\250\372\363\334\327\262\261\017\003\201\011\051\340\161
\174\213\372\177\313\066\156\033\350\024\316\360\113\046\241\062
\051\117\314\264\365\207\110\014\023\374\307\235\257\253\324\223
\365\052\115\177\110\202\130\076\027\377\303\200\052\253\077\127
\125\270\071\054\146\020\144\046\155\214\153\326\335\240\203\032
\132\126\021\226\106\275\256\160\050\326\070\127\133\221\325\077
\115\351\254\263\303\044\112\226\145\134\064\320\036\324\277\010
\245\227\135\367\106\333\166\360\315\076\165\143\000\053\257\255
\256\206\336\137\246\231\124\015\205\043\245\374\272\355\033\122
\372\111\030\167\205\133\252\162\233\047\010\065\105\067\047\333
\227\311\372\213\075\310\320\235\336\132\357\135\243\026\266\230
\171\312\174\313
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Certipost E-Trust Primary Normalised CA"

Issuer: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE

Serial Number:04:00:00:00:00:01:05:52:64:c7:61

Subject: CN=Certipost E-Trust Primary Normalised CA,O=Certipost s.a./n.v.,C=BE

Not Valid

Before: Tue Jul 26 10:00:00 2005

Not Valid After: Sun Jul 26 10:00:00 2020

Fingerprint (MD5): 21:ef:b8:50:40:39:3f:75:6f:27:fe:e3:ea:58:70:eb

Fingerprint (SHA1): a5:9c:9b:10:ec:73:57:51:5a:bb:66:0c:4d:94:f7:3b:9e:6e:92:72

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Certipost E-Trust Primary Normalised CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\245\234\233\020\354\163\127\121\132\273\146\014\115\224\367\073
```

```
\236\156\222\162
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\041\357\270\120\100\071\077\165\157\047\376\343\352\130\160\353
```

```

END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\034\060\032\006\003\125\004\012\023\023\103\145\162\164\151\160
\157\163\164\040\163\056\141\056\057\156\056\166\056\061\060\060
\056\006\003\125\004\003\023\047\103\145\162\164\151\160\157\163
\164\040\105\055\124\162\165\163\164\040\120\162\151\155\141\162
\171\040\116\157\162\155\141\154\151\163\145\144\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\005\122\144\307\141
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Cybertrust Global Root"
# Issuer: CN=Cybertrust Global Root,O=Cybertrust\, Inc
# Serial Number:04:00:00:00:00:01:0f:85:aa:2d:48
# Subject: CN=Cybertrust Global Root,O=Cybertrust\, Inc
# Not Valid Before: Fri Dec 15 08:00:00 2006
# Not Valid After: Wed Dec 15 08:00:00 2021
# Fingerprint (MD5): 72:e4:4a:87:e3:69:40:80:77:ea:bc:e3:f4:ff:f0:e1
# Fingerprint (SHA1): 5f:43:e5:b1:bf:f8:78:8c:ac:1c:c7:ca:4a:9a:c6:22:2b:cc:34:c6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
"Cybertrust Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163
\164\040\107\154\157\142\141\154\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163
\164\040\107\154\157\142\141\154\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL

```

\002\013\004\000\000\000\000\000\001\017\205\252\055\110

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\241\060\202\002\211\240\003\002\001\002\002\013\004
\000\000\000\000\001\017\205\252\055\110\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\060\073\061\030\060\026\006
\003\125\004\012\023\017\103\171\142\145\162\164\162\165\163\164
\054\040\111\156\143\061\037\060\035\006\003\125\004\003\023\026
\103\171\142\145\162\164\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\060\036\027\015\060\066\061\062\061\065
\060\070\060\060\060\060\132\027\015\062\061\061\062\061\065\060
\070\060\060\060\060\132\060\073\061\030\060\026\006\003\125\004
\012\023\017\103\171\142\145\162\164\162\165\163\164\054\040\111
\156\143\061\037\060\035\006\003\125\004\003\023\026\103\171\142
\145\162\164\162\165\163\164\040\107\154\157\142\141\154\040\122
\157\157\164\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\370\310\274\275\024\120\146\023\377\360\323\171
\354\043\362\267\032\307\216\205\361\022\163\246\031\252\020\333
\234\242\145\164\132\167\076\121\175\126\366\334\043\266\324\355
\137\130\261\067\115\325\111\016\156\365\152\207\326\322\214\322
\047\306\342\377\066\237\230\145\240\023\116\306\052\144\233\325
\220\022\317\024\006\364\073\343\324\050\276\350\016\370\253\116
\110\224\155\216\225\061\020\134\355\242\055\275\325\072\155\262
\034\273\140\300\106\113\001\365\111\256\176\106\212\320\164\215
\241\014\002\316\356\374\347\217\270\153\146\363\177\104\000\277
\146\045\024\053\335\020\060\035\007\226\077\115\366\153\270\217
\267\173\014\245\070\353\336\107\333\325\135\071\374\210\247\363
\327\052\164\361\350\132\242\073\237\120\272\246\214\105\065\302
\120\145\225\334\143\202\357\335\277\167\115\234\142\311\143\163
\026\320\051\017\111\251\110\360\263\252\267\154\305\247\060\071
\100\135\256\304\342\135\046\123\360\316\034\043\010\141\250\224
\031\272\004\142\100\354\037\070\160\167\022\006\161\247\060\030
\135\045\047\245\002\003\001\000\001\243\201\245\060\201\242\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\035\006\003\125\035\016\004\026\004\024\266\010\173\015\172
\314\254\040\114\206\126\062\136\317\253\156\205\055\160\127\060
\077\006\003\125\035\037\004\070\060\066\060\064\240\062\240\060
\206\056\150\164\164\160\072\057\057\167\167\167\062\056\160\165
\142\154\151\143\055\164\162\165\163\164\056\143\157\155\057\143
\162\154\057\143\164\057\143\164\162\157\157\164\056\143\162\154
\060\037\006\003\125\035\043\004\030\060\026\200\024\266\010\173
\015\172\314\254\040\114\206\126\062\136\317\253\156\205\055\160
\127\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\001\001\000\126\357\012\043\240\124\116\225\227\311\370
\211\332\105\301\324\243\000\045\364\037\023\253\267\243\205\130
\151\302\060\255\330\025\212\055\343\311\315\201\132\370\163\043

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\132\247\174\005\363\375\042\073\016\321\006\304\333\066\114\163
\004\216\345\260\042\344\305\363\056\245\331\043\343\270\116\112
\040\247\156\002\044\237\042\140\147\173\213\035\162\011\305\061
\134\351\171\237\200\107\075\255\241\013\007\024\075\107\377\003
\151\032\014\013\104\347\143\045\247\177\262\311\270\166\204\355
\043\366\175\007\253\105\176\323\337\263\277\351\212\266\315\250
\242\147\053\122\325\267\145\360\071\114\143\240\221\171\223\122
\017\124\335\203\273\237\321\217\247\123\163\303\313\377\060\354
\174\004\270\330\104\037\223\137\161\011\042\267\156\076\352\034
\003\116\235\032\040\141\373\201\067\354\136\374\012\105\253\327
\347\027\125\320\240\352\140\233\246\366\343\214\133\051\302\006
\140\024\235\055\227\114\251\223\025\235\141\304\001\137\110\326
\130\275\126\061\022\116\021\310\041\340\263\021\221\145\333\264
\246\210\070\316\125
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Cybertrust Global Root"

Issuer: CN=Cybertrust Global Root,O=Cybertrust\, Inc

Serial Number:04:00:00:00:00:01:0f:85:aa:2d:48

Subject: CN=Cybertrust Global Root,O=Cybertrust\, Inc

Not Valid Before: Fri Dec 15 08:00:00 2006

Not Valid

After: Wed Dec 15 08:00:00 2021

Fingerprint (MD5): 72:e4:4a:87:e3:69:40:80:77:ea:bc:e3:f4:ff:f0:e1

Fingerprint (SHA1): 5f:43:e5:b1:bf:f8:78:8c:ac:1c:c7:ca:4a:9a:c6:22:2b:cc:34:c6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Cybertrust Global Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\137\103\345\261\277\370\170\214\254\034\307\312\112\232\306\042
\053\314\064\306
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\162\344\112\207\343\151\100\200\167\352\274\343\364\377\360\341
```

CKA_ISSUER MULTILINE_OCTAL

```
\060\073\061\030\060\026\006\003\125\004\012\023\017\103\171\142
\145\162\164\162\165\163\164\054\040\111\156\143\061\037\060\035
\006\003\125\004\003\023\026\103\171\142\145\162\164\162\165\163
\164\040\107\154\157\142\141\154\040\122\157\157\164
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\017\205\252\055\110
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "IGC/A"
# Issuer:
1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR
# Serial Number:39:11:45:10:94
# Subject:
1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR
# Not Valid Before: Fri Dec 13 14:29:23 2002
# Not Valid After: Sat Oct 17 14:29:22 2020
# Fingerprint (MD5): 0c:7f:dd:6a:f4:2a:b9:c8:9b:bd:20:7e:a9:db:5c:37
# Fingerprint (SHA1): 60:d6:89:74:b5:c2:65:9e:8a:0f:c1:88:7c:88:d2:46:69:1b:18:2c
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IGC/A"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
\056\147\157\165\166\056\146\162
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
```

\056\147\157\165\166\056\146\162

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\005\071\021\105\020\224

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\002\060\202\002\352\240\003\002\001\002\002\005\071
\021\105\020\224\060\015\006\011\052\206\110\206\367\015\001\001
\005\005\000\060\201\205\061\013\060\011\006\003\125\004\006\023
\002\106\122\061\017\060\015\006\003\125\004\010\023\006\106\162
\141\156\143\145\061\016\060\014\006\003\125\004\007\023\005\120
\141\162\151\163\061\020\060\016\006\003\125\004\012\023\007\120
\115\057\123\107\104\116\061\016\060\014\006\003\125\004\013\023
\005\104\103\123\123\111\061\016\060\014\006\003\125\004\003\023
\005\111\107\103\057\101\061\043\060\041\006\011\052\206\110\206
\367\015\001\011\001\026\024\151\147\143\141\100\163\147\144\156
\056\160\155\056\147\157\165\166\056\146\162\060\036\027\015\060
\062\061\062\061\063\061\064\062\071\062\063\132\027\015\062\060
\061\060\061\067\061\064\062\071\062\062\132\060\201\205\061\013
\060\011\006\003\125\004\006\023\002\106\122\061\017\060\015\006
\003\125\004\010\023\006\106\162\141\156\143\145\061\016\060\014
\006\003\125\004\007\023\005\120\141\162\151\163\061\020\060\016
\006\003\125\004\012\023\007\120\115\057\123\107\104\116\061\016
\060\014\006\003\125\004\013\023\005\104\103\123\123\111\061\016
\060\014\006\003\125\004\003\023\005\111\107\103\057\101\061\043
\060\041\006\011\052\206\110\206\367\015\001\011\001\026\024\151
\147\143\141\100\163\147\144\156\056\160\155\056\147\157\165\166
\056\146\162\060\202\001\042\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002
\202\001\001\000\262\037\321\320\142\305\063\073\300\004\206\210
\263\334\370\210\367\375\337\103\337\172\215\232\111\134\366\116
\252\314\034\271\241\353\047\211\362\106\351\073\112\161\325\035
\216\055\317\346\255\253\143\120\307\124\013\156\022\311\220\066
\306\330\057\332\221\252\150\305\162\376\027\012\262\027\176\171
\265\062\210\160\312\160\300\226\112\216\344\125\315\035\047\224
\277\316\162\052\354\134\371\163\040\376\275\367\056\211\147\270
\273\107\163\022\367\321\065\151\072\362\012\271\256\377\106\102
\106\242\277\241\205\032\371\277\344\377\111\205\367\243\160\206
\062\034\135\237\140\367\251\255\245\377\317\321\064\371\175\133
\027\306\334\326\016\050\153\302\335\361\365\063\150\235\116\374
\207\174\066\022\326\243\200\350\103\015\125\141\224\352\144\067
\107\352\167\312\320\262\130\005\303\135\176\261\250\106\220\061
\126\316\160\052\226\262\060\270\167\346\171\300\275\051\073\375
\224\167\114\275\040\315\101\045\340\056\307\033\273\356\244\004
\101\322\135\255\022\152\212\233\107\373\311\335\106\100\341\235
\074\063\320\265\002\003\001\000\001\243\167\060\165\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\013

\006\003\125\035\017\004\004\003\002\001\106\060\025\006\003\125
\035\040\004\016\060\014\060\012\006\010\052\201\172\001\171\001
\001\001\060\035\006\003\125\035\016\004\026\004\024\243\005\057
\030\140\120\302\211\012\335\053\041\117\377\216\116\250\060\061
\066\060\037\006\003\125\035\043\004\030\060\026\200\024\243\005
\057\030\140\120\302\211\012\335\053\041\117\377\216\116\250\060
\061\066\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\003\202\001\001\000\005\334\046\330\372\167\025\104\150\374
\057\146\072\164\340\135\344\051\377\006\007\023\204\112\253\317
\155\240\037\121\224\370\111\313\164\066\024\274\025\335\333\211
\057\335\217\240\135\174\365\022\353\237\236\070\244\107\314\263
\226\331\276\234\045\253\003\176\063\017\225\201\015\375\026\340
\210\276\067\360\154\135\320\061\233\062\053\135\027\145\223\230
\140\274\156\217\261\250\074\036\331\034\363\251\046\102\371\144
\035\302\347\222\366\364\036\132\252\031\122\135\257\350\242\367
\140\240\366\215\360\211\365\156\340\012\005\001\225\311\213\040
\012\272\132\374\232\054\074\275\303\267\311\135\170\045\005\077
\126\024\233\014\332\373\072\110\376\227\151\136\312\020\206\367
\116\226\004\010\115\354\260\276\135\334\073\216\117\301\375\232
\066\064\232\114\124\176\027\003\110\225\010\021\034\007\157\205
\010\176\135\115\304\235\333\373\256\316\262\321\263\270\203\154
\035\262\263\171\361\330\160\231\176\360\023\002\316\136\335\121
\323\337\066\201\241\033\170\057\161\263\361\131\114\106\030\050
\253\205\322\140\126\132

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "IGC/A"

Issuer:

1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR

Serial Number:39:11:45:10:94

Subject:

1.2.840.113549.1.9.1=igca@sgdn.pm.gouv.fr,CN=IGC/A,OU=DCSSI,O=PM/SGDN,L=Paris,ST=France,C=FR

Not Valid Before: Fri Dec 13 14:29:23 2002

Not Valid After: Sat Oct 17 14:29:22 2020

Fingerprint (MD5): 0c:7f:dd:6a:f4:2a:b9:c8:9b:bd:20:7e:a9:db:5c:37

Fingerprint (SHA1):

60:d6:89:74:b5:c2:65:9e:8a:0f:c1:88:7c:88:d2:46:69:1b:18:2c

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "IGC/A"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\140\326\211\164\265\302\145\236\212\017\301\210\174\210\322\106
\151\033\030\054

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\014\177\335\152\364\052\271\310\233\275\040\176\251\333\134\067
END

CKA_ISSUER MULTILINE_OCTAL

\060\201\205\061\013\060\011\006\003\125\004\006\023\002\106\122
\061\017\060\015\006\003\125\004\010\023\006\106\162\141\156\143
\145\061\016\060\014\006\003\125\004\007\023\005\120\141\162\151
\163\061\020\060\016\006\003\125\004\012\023\007\120\115\057\123
\107\104\116\061\016\060\014\006\003\125\004\013\023\005\104\103
\123\123\111\061\016\060\014\006\003\125\004\003\023\005\111\107
\103\057\101\061\043\060\041\006\011\052\206\110\206\367\015\001
\011\001\026\024\151\147\143\141\100\163\147\144\156\056\160\155
\056\147\157\165\166\056\146\162

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\005\071\021\105\020\224

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "SwissSign Platinum CA - G2"

Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

Serial Number:4e:b2:00:67:0c:03:5d:4f

Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

Not Valid Before: Wed Oct 25 08:36:00 2006

Not Valid After: Sat Oct 25 08:36:00 2036

Fingerprint (MD5): c9:98:27:77:28:1e:3d:0e:15:3c:84:00:b8:85:03:e6

Fingerprint (SHA1): 56:e0:fa:c0:3b:8f:18:23:55:18:e5:d3:11:ca:e8:c2:43:31:ab:66

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SwissSign Platinum CA - G2"

CKA_CERTIFICATE_TYPE

CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\103\101\040\055\040\107\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\103\101\040\055\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\010\116\262\000\147\014\003\135\117

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\301\060\202\003\251\240\003\002\001\002\002\010\116
\262\000\147\014\003\135\117\060\015\006\011\052\206\110\206\367
\015\001\001\005\005\000\060\111\061\013\060\011\006\003\125\004
\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014
\123\167\151\163\163\123\151\147\156\040\101\107\061\043\060\041
\006\003\125\004\003\023\032\123\167\151\163\163\123\151\147\156
\040\120\154\141\164\151\156\165\155\040\103\101\040\055\040\107
\062\060\036\027\015\060\066\061\060\062\065\060\070\063\066\060
\060\132\027\015\063\066\061\060\062\065\060\070\063\066\060\060
\132\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110
\061\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163
\123\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003
\023\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164
\151\156\165\155\040\103\101\040\055\040\107\062\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\312\337\242
\002\342\332\370\374\007\026\261\336\140\252\336\226\134\144\037
\307\057\176\317\147\372\104\102\326\166\143\225\256\353\257\162
\040\212\105\107\206\142\170\206\326\040\071\046\364\256\243\375
\043\347\245\234\265\042\041\031\267\067\223\042\300\120\234\202
\173\324\325\004\104\134\313\264\302\237\222\276\044\330\173\147
\042\342\151\137\345\005\170\324\207\331\161\160\063\045\123\264
\207\073\051\220\050\066\232\125\104\060\150\244\203\227\177\015
\036\234\166\377\025\235\140\227\000\215\212\205\003\354\200\276
\352\054\156\020\121\222\314\176\325\243\063\330\326\111\336\130
\052\257\366\026\353\113\173\220\062\227\271\272\235\130\361\370
\127\111\004\036\242\135\006\160\335\161\333\371\335\213\232\033
\214\317\075\243\115\316\313\174\366\273\234\240\372\011\316\043
\142\262\351\015\037\342\162\050\217\237\254\150\040\175\157\073
\250\205\061\011\177\013\307\350\145\351\343\170\016\011\147\060
\213\064\202\373\135\340\314\235\201\155\142\356\010\036\004\054
\116\233\354\376\251\117\137\375\151\170\357\011\037\241\264\277
\372\363\357\220\036\114\005\213\036\352\172\221\172\303\327\345
\373\060\274\154\033\020\130\230\367\032\137\320\051\062\003\023
\106\115\141\152\205\114\122\164\057\006\037\173\021\342\204\227

\306\231\363\155\177\327\147\203\176\023\150\330\161\050\132\330
\316\335\350\020\024\232\376\155\043\207\156\216\132\160\074\325
\215\011\000\247\252\274\260\061\067\155\310\204\024\036\133\275
\105\143\040\153\113\164\214\275\333\072\016\301\317\132\026\217
\245\230\362\166\211\262\023\022\073\013\167\167\254\273\345\074
\051\112\222\162\312\141\032\053\136\114\342\203\164\167\372\065
\110\172\205\115\215\232\123\304\337\170\312\227\221\110\053\105
\053\001\367\034\032\242\355\030\272\012\275\203\372\157\274\215
\127\223\073\324\324\246\316\036\361\240\261\316\253\375\053\050
\232\117\033\327\303\162\333\244\304\277\135\114\365\335\173\226
\151\356\150\200\346\347\230\272\066\267\376\156\355\053\275\040
\370\145\031\332\125\011\176\045\334\376\141\142\162\371\176\030
\002\357\143\264\320\373\257\345\073\143\214\147\217\002\003\001
\000\001\243\201\254\060\201\251\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016
\004\026\004\024\120\257\314\007\207\025\107\157\070\305\264\145
\321\336\225\252\351\337\234\314\060\037\006\003\125\035\043\004
\030\060\026\200\024\120\257\314\007\207\025\107\157\070\305\264
\145\321\336\225\252\351\337\234\314\060\106\006\003\125\035\040
\004\077\060\075\060\073\006\011\140\205\164\001\131\001\001\001
\001\060\056\060\054\006\010\053\006\001\005\005\007\002\001\026
\040\150\164\164\160\072\057\057\162\145\160\157\163\151\164\157
\162\171\056\163\167\151\163\163\163\151\147\156\056\143\157\155
\057\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\202\002\001\000\010\205\246\365\026\014\374\104\032\301\143
\340\371\125\106\010\374\160\034\102\050\226\216\267\305\301\101
\165\116\011\161\171\345\155\226\312\113\245\210\140\320\060\164
\270\312\010\334\264\060\236\100\007\026\153\145\225\167\001\256
\244\267\065\013\201\332\161\025\251\164\027\070\173\130\312\371
\057\373\300\145\166\215\133\001\271\175\336\202\075\144\270\276
\024\164\243\012\124\323\054\225\030\027\065\365\121\153\077\217
\242\226\141\071\170\153\113\345\246\240\370\123\337\121\020\223
\142\347\200\057\342\321\340\274\216\066\106\167\063\354\270\373
\216\232\054\211\115\061\021\017\046\236\004\273\267\004\215\013
\362\271\374\132\235\073\026\267\057\310\230\253\376\212\120\131
\056\243\073\374\051\135\213\301\113\311\342\212\023\035\261\277
\273\102\035\122\335\116\330\024\136\020\306\061\007\357\161\047
\367\033\071\011\334\202\352\213\263\225\206\136\375\365\332\135
\061\246\340\061\266\224\346\104\111\164\305\026\345\367\037\003
\141\050\305\310\313\022\240\102\113\371\153\210\010\215\264\062
\030\363\165\237\304\177\000\117\005\225\234\243\027\002\303\263
\123\233\252\040\071\051\053\146\372\235\257\136\263\222\322\265
\246\341\032\371\055\101\151\201\024\264\264\265\355\211\075\316
\373\251\235\065\102\104\261\034\024\163\201\317\052\001\065\232
\061\325\055\217\155\204\337\200\115\127\343\077\305\204\165\332
\211\306\060\273\353\217\313\042\010\240\256\252\361\003\154\072
\113\115\011\245\016\162\306\126\153\041\102\116\043\045\024\150

```
\256\166\012\174\014\007\160\144\371\232\057\366\005\071\046\306
\014\217\031\177\103\136\156\364\133\025\057\333\141\135\346\147
\057\077\010\224\371\140\264\230\061\332\164\361\204\223\161\115
\137\373\140\130\321\373\304\301\155\211\242\273\040\037\235\161
\221\313\062\233\023\075\076\175\222\122\065\254\222\224\242\323
\030\302\174\307\352\257\166\005\026\335\147\047\302\176\034\007
\042\041\363\100\012\033\064\007\104\023\302\204\152\216\337\031
\132\277\177\353\035\342\032\070\321\134\257\107\222\153\200\265
\060\245\311\215\330\253\061\201\037\337\302\146\067\323\223\251
\205\206\171\145\322
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only

Certificate

Trust for "SwissSign Platinum CA - G2"

Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

Serial Number:4e:b2:00:67:0c:03:5d:4f

Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

Not Valid Before: Wed Oct 25 08:36:00 2006

Not Valid After: Sat Oct 25 08:36:00 2036

Fingerprint (MD5): c9:98:27:77:28:1e:3d:0e:15:3c:84:00:b8:85:03:e6

Fingerprint (SHA1): 56:e0:fa:c0:3b:8f:18:23:55:18:e5:d3:11:ca:e8:c2:43:31:ab:66

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SwissSign Platinum CA - G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\126\340\372\300\073\217\030\043\125\030\345\323\021\312\350\302
\103\061\253\146
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\311\230\047\167\050\036\075\016\025\074\204\000\270\205\003\346
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023
\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\103\101\040\055\040\107\062
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\010\116\262\000\147\014\003\135\117
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "S-TRUST Authentication and Encryption Root CA 2005:PN"
# Issuer: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag
  GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE
# Serial Number:37:19:18:e6:53:54:7c:1a:b5:b8:cb:59:5a:db:35:b7
# Subject: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag
  GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE
# Not Valid Before: Wed Jun 22 00:00:00 2005
#
  Not Valid After: Fri Jun 21 23:59:59 2030
# Fingerprint (MD5): 04:4b:fd:c9:6c:da:2a:32:85:7c:59:84:61:46:8a:64
# Fingerprint (SHA1): be:b5:a9:95:74:6b:9e:df:73:8b:56:e6:df:43:7a:77:be:10:6b:81
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "S-TRUST Authentication and Encryption Root CA 2005:PN"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120
\116
END
CKA_ID
  UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142

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\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120
\116

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\067\031\030\346\123\124\174\032\265\270\313\131\132\333
\065\267

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\004\173\060\202\003\143\240\003\002\001\002\002\020\067
\031\030\346\123\124\174\032\265\270\313\131\132\333\065\267\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\256\061\013\060\011\006\003\125\004\006\023\002\104\105\061\040
\060\036\006\003\125\004\010\023\027\102\141\144\145\156\055\127
\165\145\162\164\164\145\155\142\145\162\147\040\050\102\127\051
\061\022\060\020\006\003\125\004\007\023\011\123\164\165\164\164
\147\141\162\164\061\051\060\047\006\003\125\004\012\023\040\104
\145\165\164\163\143\150\145\162\040\123\160\141\162\153\141\163
\163\145\156\040\126\145\162\154\141\147\040\107\155\142\110\061
\076\060\074\006\003\125\004\003\023\065\123\055\124\122\125\123
\124\040\101\165\164\150\145\156\164\151\143\141\164\151\157\156
\040\141\156\144\040\105\156\143\162\171\160\164\151\157\156\040
\122\157\157\164\040\103\101\040\062\060\060\065\072\120\116\060
\036\027\015\060\065\060\066\062\062\060\060\060\060\060\132
\027\015\063\060\060\066\062\061\062\063\065\071\065\071\132\060
\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156\055
\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102\127
\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165\164
\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023\040
\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153\141
\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142\110
\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122\125
\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151\157
\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157\156
\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120\116
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\331\265\112\301\323\063\352\323\106\263\321\342\114\322\365
\266\203\320\157\325\030\351\223\257\047\216\023\315\265\045\066
\120\064\022\144\051\241\125\341\072\140\223\236\050\311\343\363
\233\341\004\260\043\277\225\212\216\133\033\101\177\132\303\350
\115\114\325\044\026\076\207\110\324\047\256\346\367\123\035\273
\014\000\357\076\141\161\255\277\072\172\130\037\224\075\134\201
\325\325\157\337\270\233\322\365\345\313\203\162\222\302\123\262

\202\002\353\255\255\137\026\055\222\123\166\361\211\266\054\365
\301\057\340\247\112\157\240\060\152\062\353\232\164\003\150\170
\023\235\312\057\233\013\035\276\317\165\015\046\227\233\307\365
\136\012\237\170\337\263\274\354\232\272\357\125\217\033\232\246
\007\143\051\027\131\142\011\052\171\007\167\245\340\321\027\151
\351\133\335\366\220\253\342\230\012\000\321\045\155\236\327\205
\207\057\222\361\321\166\203\117\013\072\131\067\050\057\063\247
\027\120\326\040\013\012\364\046\371\237\070\347\055\244\270\233
\211\215\255\255\311\152\175\211\027\273\366\177\200\203\172\346
\355\002\003\001\000\001\243\201\222\060\201\217\060\022\006\003
\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\000
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\051\006\003\125\035\021\004\042\060\040\244\036\060\034\061
\032\060\030\006\003\125\004\003\023\021\123\124\122\157\156\154
\151\156\145\061\055\062\060\064\070\055\065\060\035\006\003\125
\035\016\004\026\004\024\017\312\036\134\171\340\242\363\051\266
\322\205\263\013\112\265\145\354\153\122\060\037\006\003\125\035
\043\004\030\060\026\200\024\017\312\036\134\171\340\242\363\051
\266\322\205\263\013\112\265\145\354\153\122\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\257
\001\360\355\031\074\050\350\115\134\273\245\143\034\210\063\003
\247\000\207\244\037\040\253\326\034\343\006\037\227\176\124\275
\267\321\262\311\325\332\200\354\027\327\212\365\173\302\000\366
\351\021\157\204\240\132\045\061\342\211\371\244\000\077\061\150
\056\325\075\350\156\346\325\035\074\077\262\275\237\167\353\235
\323\214\272\300\327\266\115\354\123\234\017\004\156\352\065\147
\127\343\012\145\173\220\072\341\117\076\303\000\222\172\273\005
\211\163\214\313\246\115\300\373\366\002\326\260\007\243\003\302
\047\100\237\014\344\205\202\055\257\232\102\035\320\307\215\370
\100\356\235\006\127\034\331\242\330\200\024\376\341\143\055\062
\207\325\224\122\226\072\106\306\161\226\075\367\230\016\262\221
\252\217\332\364\116\044\000\071\125\350\255\027\271\323\064\053
\112\251\100\314\027\052\125\145\101\164\102\176\365\300\257\310
\223\255\362\030\133\075\211\014\333\107\071\044\370\340\114\362
\037\260\075\012\312\005\116\211\041\032\343\052\231\254\374\177
\241\361\017\033\037\075\236\004\203\335\226\331\035\072\224

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "S-TRUST Authentication
and Encryption Root CA 2005:PN"

Issuer: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE

Serial Number:37:19:18:e6:53:54:7c:1a:b5:b8:cb:59:5a:db:35:b7

```

# Subject: CN=S-TRUST Authentication and Encryption Root CA 2005:PN,O=Deutscher Sparkassen Verlag
GmbH,L=Stuttgart,ST=Baden-Wuerttemberg (BW),C=DE
# Not Valid Before: Wed Jun 22 00:00:00 2005
# Not Valid After: Fri Jun 21 23:59:59 2030
# Fingerprint (MD5): 04:4b:fd:c9:6c:da:2a:32:85:7c:59:84:61:46:8a:64
# Fingerprint (SHA1): be:b5:a9:95:74:6b:9e:df:73:8b:56:e6:df:43:7a:77:be:10:6b:81
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "S-TRUST Authentication and Encryption Root CA 2005:PN"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\276\265\251\225\164\153\236\337\163\213\126\346\337\103\172\167
\276\020\153\201
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\004\113\375\311\154\332\052\062\205\174\131\204\141\106\212\144
END
CKA_ISSUER
MULTILINE_OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\040\060\036\006\003\125\004\010\023\027\102\141\144\145\156
\055\127\165\145\162\164\164\145\155\142\145\162\147\040\050\102
\127\051\061\022\060\020\006\003\125\004\007\023\011\123\164\165
\164\164\147\141\162\164\061\051\060\047\006\003\125\004\012\023
\040\104\145\165\164\163\143\150\145\162\040\123\160\141\162\153
\141\163\163\145\156\040\126\145\162\154\141\147\040\107\155\142
\110\061\076\060\074\006\003\125\004\003\023\065\123\055\124\122
\125\123\124\040\101\165\164\150\145\156\164\151\143\141\164\151
\157\156\040\141\156\144\040\105\156\143\162\171\160\164\151\157
\156\040\122\157\157\164\040\103\101\040\062\060\060\065\072\120
\116
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\067\031\030\346\123\124\174\032\265\270\313\131\132\333
\065\267
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Primary Certification Authority"
# Issuer: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US
# Serial Number:18:ac:b5:6a:fd:69:b6:15:3a:63:6c:af:da:fa:c4:a1
# Subject: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US

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```
# Not Valid Before: Mon Nov 27 00:00:00 2006
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (MD5): 02:26:c3:01:5e:08:30:37:43:a9:d0:7d:cf:37:e6:bf
# Fingerprint (SHA1): 32:3c:11:8e:1b:f7:b8:b6:52:54:e2:e2:10:0d:d6:02:90:37:f0:96
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\061\060\057\006\003\125\004\003
\023\050\107\145\157\124\162\165\163\164\040\120\162\151\155\141
\162\171\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\061\060\057\006\003\125\004\003
\023\050\107\145\157\124\162\165\163\164\040\120\162\151\155\141
\162\171\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\030\254\265\152\375\151\266\025\072\143\154\257\332\372
\304\241
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\174\060\202\002\144\240\003\002\001\002\002\020\030
\254\265\152\375\151\266\025\072\143\154\257\332\372\304\241\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\130
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026\060
\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163\164
\040\111\156\143\056\061\061\060\057\006\003\125\004\003\023\050
\107\145\157\124\162\165\163\164\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\060\036\027\015\060\066\061\061
\062\067\060\060\060\060\060\060\132\027\015\063\066\060\067\061
\066\062\063\065\071\065\071\132\060\130\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012
\023\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061
\061\060\057\006\003\125\004\003\023\050\107\145\157\124\162\165
\163\164\040\120\162\151\155\141\162\171\040\103\145\162\164\151
```


\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202
\001\001\000\276\270\025\173\377\324\174\175\147\255\203\144\173
\310\102\123\055\337\366\204\010\040\141\326\001\131\152\234\104
\021\257\357\166\375\225\176\316\141\060\273\172\203\137\002\275
\001\146\312\356\025\215\157\241\060\234\275\241\205\236\224\072
\363\126\210\000\061\317\330\356\152\226\002\331\355\003\214\373
\165\155\347\352\270\125\026\005\026\232\364\340\136\261\210\300
\144\205\134\025\115\210\307\267\272\340\165\351\255\005\075\235
\307\211\110\340\273\050\310\003\341\060\223\144\136\122\300\131
\160\042\065\127\210\212\361\225\012\203\327\274\061\163\001\064
\355\357\106\161\340\153\002\250\065\162\153\227\233\146\340\313
\034\171\137\330\032\004\150\036\107\002\346\235\140\342\066\227
\001\337\316\065\222\337\276\147\307\155\167\131\073\217\235\326
\220\025\224\274\102\064\020\301\071\371\261\047\076\176\326\212
\165\305\262\257\226\323\242\336\233\344\230\276\175\341\351\201
\255\266\157\374\327\016\332\340\064\260\015\032\167\347\343\010
\230\357\130\372\234\204\267\066\257\302\337\254\322\364\020\006
\160\161\065\002\003\001\000\001\243\102\060\100\060\017\006\003
\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006
\003\125\035\016\004\026\004\024\054\325\120\101\227\025\213\360
\217\066\141\133\112\373\153\331\231\311\063\222\060\015\006\011
\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000
\132\160\177\054\335\267\064\117\365\206\121\251\046\276\113\270
\252\361\161\015\334\141\307\240\352\064\036\172\167\017\004\065
\350\047\217\154\220\277\221\026\044\106\076\112\116\316\053\026
\325\013\122\035\374\037\147\242\002\105\061\117\316\363\372\003
\247\171\235\123\152\331\332\143\072\370\200\327\323\231\341\245
\341\276\324\125\161\230\065\072\276\223\352\256\255\102\262\220
\157\340\374\041\115\065\143\063\211\111\326\233\116\312\307\347
\116\011\000\367\332\307\357\231\142\231\167\266\225\042\136\212
\240\253\364\270\170\230\312\070\031\231\311\162\236\170\315\113
\254\257\031\240\163\022\055\374\302\101\272\201\221\332\026\132
\061\267\371\264\161\200\022\110\231\162\163\132\131\123\301\143
\122\063\355\247\311\322\071\002\160\372\340\261\102\146\051\252
\233\121\355\060\124\042\024\137\331\253\035\301\344\224\360\370
\365\053\367\352\312\170\106\326\270\221\375\246\015\053\032\024
\001\076\200\360\102\240\225\007\136\155\315\314\113\244\105\215
\253\022\350\263\336\132\345\240\174\350\017\042\035\132\351\131

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

```
# Trust for "GeoTrust Primary Certification Authority"
# Issuer: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US
# Serial Number:18:ac:b5:6a:fd:69:b6:15:3a:63:6c:af:da:fa:c4:a1
# Subject: CN=GeoTrust Primary Certification Authority,O=GeoTrust Inc.,C=US
# Not Valid
  Before: Mon Nov 27 00:00:00 2006
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (MD5): 02:26:c3:01:5e:08:30:37:43:a9:d0:7d:cf:37:e6:bf
# Fingerprint (SHA1): 32:3c:11:8e:1b:f7:b8:b6:52:54:e2:e2:10:0d:d6:02:90:37:f0:96
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Primary Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\062\074\021\216\033\367\270\266\122\124\342\342\020\015\326\002
\220\067\360\226
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\002\046\303\001\136\010\060\067\103\251\320\175\317\067\346\277
END
CKA_ISSUER MULTILINE_OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\061\060\057\006\003\125\004\003
\023\050\107\145\157\124\162\165\163\164\040\120\162\151\155\141
\162\171\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\030\254\265\152\375\151\266\025\072\143\154\257\332\372
\304\241
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "thawte Primary Root CA"
# Issuer: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification
Services Division,O=thawte\, Inc.,C=US
# Serial Number:34:4e:d5:57:20:d5:ed:ec:49:f4:2f:ce:37:db:2b:6d
# Subject: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification
Services Division,O=thawte\, Inc.,C=US
# Not Valid Before: Fri Nov 17 00:00:00 2006
# Not Valid After: Wed Jul 16 23:59:59 2036
```

```
# Fingerprint (MD5): 8c:ca:dc:0b:22:ce:f5:be:72:ac:41:1a:11:a8:d8:12
# Fingerprint (SHA1): 91:c6:d6:ee:3e:8a:c8:63:84:e5:48:c2:99:29:5c:75:6c:81:7b:81
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "thawte Primary Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\251\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\066\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\037\060\035\006
\003\125\004\003\023\026\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\251\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\066\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\037\060\035\006
\003\125\004\003\023\026\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\064\116\325\127\040\325\355\354\111\364\057\316\067\333
\053\155
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\040\060\202\003\010\240\003\002\001\002\002\020\064
\116\325\127\040\325\355\354\111\364\057\316\067\333\053\155\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\251\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025
\060\023\006\003\125\004\012\023\014\164\150\141\167\164\145\054
\040\111\156\143\056\061\050\060\046\006\003\125\004\013\023\037
```

\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\040\104\151\166\151\163\151\157\156\061
\070\060\066\006\003\125\004\013\023\057\050\143\051\040\062\060
\060\066\040\164\150\141\167\164\145\054\040\111\156\143\056\040
\055\040\106\157\162\040\141\165\164\150\157\162\151\172\145\144
\040\165\163\145\040\157\156\154\171\061\037\060\035\006\003\125
\004\003\023\026\164\150\141\167\164\145\040\120\162\151\155\141
\162\171\040\122\157\157\164\040\103\101\060\036\027\015\060\066
\061\061\061\067\060\060\060\060\060\060\132\027\015\063\066\060
\067\061\066\062\063\065\071\065\071\132\060\201\251\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003
\125\004\012\023\014\164\150\141\167\164\145\054\040\111\156\143
\056\061\050\060\046\006\003\125\004\013\023\037\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
\145\163\040\104\151\166\151\163\151\157\156\061\070\060\066\006
\003\125\004\013\023\057\050\143\051\040\062\060\060\066\040\164
\150\141\167\164\145\054\040\111\156\143\056\040\055\040\106\157
\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145
\040\157\156\154\171\061\037\060\035\006\003\125\004\003\023\026
\164\150\141\167\164\145\040\120\162\151\155\141\162\171\040\122
\157\157\164\040\103\101\060\202\001\042\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202
\001\012\002\202\001\001\000\254\240\360\373\200\131\324\234\307
\244\317\235\241\131\163\011\020\105\014\015\054\156\150\361\154
\133\110\150\111\131\067\374\013\063\031\302\167\177\314\020\055
\225\064\034\346\353\115\011\247\034\322\270\311\227\066\002\267
\211\324\044\137\006\300\314\104\224\224\215\002\142\157\353\132
\335\021\215\050\232\134\204\220\020\172\015\275\164\146\057\152
\070\240\342\325\124\104\353\035\007\237\007\272\157\356\351\375
\116\013\051\365\076\204\240\001\361\234\253\370\034\176\211\244
\350\241\330\161\145\015\243\121\173\356\274\322\042\140\015\271
\133\235\337\272\374\121\133\013\257\230\262\351\056\351\004\350
\142\207\336\053\310\327\116\301\114\144\036\335\317\207\130\272
\112\117\312\150\007\035\034\235\112\306\325\057\221\314\174\161
\162\034\305\300\147\353\062\375\311\222\134\224\332\205\300\233
\277\123\175\053\011\364\214\235\221\037\227\152\122\313\336\011
\066\244\167\330\173\207\120\104\325\076\156\051\151\373\071\111
\046\036\011\245\200\173\100\055\353\350\047\205\311\376\141\375
\176\346\174\227\035\325\235\002\003\001\000\001\243\102\060\100
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\035\006\003\125\035\016\004\026\004\024\173\133\105\317
\257\316\313\172\375\061\222\032\152\266\363\106\353\127\110\120
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\171\021\300\113\263\221\266\374\360\351\147\324
\015\156\105\276\125\350\223\322\316\003\077\355\332\045\260\035
\127\313\036\072\166\240\114\354\120\166\350\144\162\014\244\251
\361\270\213\326\326\207\204\273\062\345\101\021\300\167\331\263

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\140\235\353\033\325\321\156\104\104\251\246\001\354\125\142\035
\167\270\134\216\110\111\174\234\073\127\021\254\255\163\067\216
\057\170\134\220\150\107\331\140\140\346\374\007\075\042\040\027
\304\367\026\351\304\330\162\371\310\163\174\337\026\057\025\251
\076\375\152\047\266\241\353\132\272\230\037\325\343\115\144\012
\235\023\310\141\272\365\071\034\207\272\270\275\173\042\177\366
\376\254\100\171\345\254\020\157\075\217\033\171\166\213\304\067
\263\041\030\204\345\066\000\353\143\040\231\271\351\376\063\004
\273\101\310\301\002\371\104\143\040\236\201\316\102\323\326\077
\054\166\323\143\234\131\335\217\246\341\016\240\056\101\367\056
\225\107\317\274\375\063\363\366\013\141\176\176\221\053\201\107
\302\047\060\356\247\020\135\067\217\134\071\053\344\004\360\173
\215\126\214\150
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "thawte Primary Root CA"

Issuer: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

Serial Number:34:4e:d5:57:20:d5:ed:ec:49:f4:2f:ce:37:db:2b:6d

Subject: CN=thawte Primary Root CA,OU=(c) 2006 thawte\, Inc. - For authorized use only,OU=Certification Services Division,O=thawte\, Inc.,C=US

Not Valid Before: Fri Nov 17 00:00:00 2006

Not Valid After: Wed Jul 16 23:59:59 2036

Fingerprint (MD5): 8c:ca:dc:0b:22:ce:f5:be:72:ac:41:1a:11:a8:d8:12

Fingerprint (SHA1): 91:c6:d6:ee:3e:8a:c8:63:84:e5:48:c2:99:29:5c:75:6c:81:7b:81

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "thawte Primary Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\221\306\326\356\076\212\310\143\204\345\110\302\231\051\134\165
\154\201\173\201
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\214\312\334\013\042\316\365\276\162\254\101\032\021\250\330\022
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\251\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\025\060\023\006\003\125\004\012\023\014\164\150\141\167\164
\145\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013
\023\037\103\145\162\164\151\146\151\143\141\164\151\157\156\040
```

```
\123\145\162\166\151\143\145\163\040\104\151\166\151\163\151\157
\156\061\070\060\066\006\003\125\004\013\023\057\050\143\051\040
\062\060\060\066\040\164\150\141\167\164\145\054\040\111\156\143
\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151\172
\145\144\040\165\163\145\040\157\156\154\171\061\037\060\035\006
\003\125\004\003\023\026\164\150\141\167\164\145\040\120\162\151
\155\141\162\171\040\122\157\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\064\116\325\127\040\325\355\354\111\364\057\316\067\333
\053\155
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "VeriSign Class 3 Public Primary Certification Authority - G5"

Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c) 2006 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

Serial Number:18:da:d1:9e:26:7d:e8:bb:4a:21:58:cd:cc:6b:3b:4a

Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c) 2006 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

#

Not Valid Before: Wed Nov 08 00:00:00 2006

Not Valid After: Wed Jul 16 23:59:59 2036

Fingerprint (MD5): cb:17:e4:31:67:3e:e2:09:fe:45:57:93:f3:0a:fa:1c

Fingerprint (SHA1): 4e:b6:d5:78:49:9b:1c:cf:5f:58:1e:ad:56:be:3d:9b:67:44:a5:e5

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G5"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\066\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
```

\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\065

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\066\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\065

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\030\332\321\236\046\175\350\273\112\041\130\315\314\153
\073\112

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\323\060\202\003\273\240\003\002\001\002\002\020\030
\332\321\236\046\175\350\273\112\041\130\315\314\153\073\112\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\312\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147
\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013
\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164
\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004
\013\023\061\050\143\051\040\062\060\060\066\040\126\145\162\151
\123\151\147\156\054\040\111\156\143\056\040\055\040\106\157\162
\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145\040
\157\156\154\171\061\105\060\103\006\003\125\004\003\023\074\126
\145\162\151\123\151\147\156\040\103\154\141\163\163\040\063\040
\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\055\040\107\065\060\036\027\015\060
\066\061\061\060\070\060\060\060\060\060\060\132\027\015\063\066
\060\067\061\066\062\063\065\071\065\071\132\060\201\312\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006
\003\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040
\111\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126
\145\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145

\164\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061
\050\143\051\040\062\060\060\066\040\126\145\162\151\123\151\147
\156\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165
\164\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154
\171\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151
\123\151\147\156\040\103\154\141\163\163\040\063\040\120\165\142
\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\055\040\107\065\060\202\001\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\257\044\010\010\051\172\065
\236\140\014\252\347\113\073\116\334\174\274\074\105\034\273\053
\340\376\051\002\371\127\010\243\144\205\025\047\365\361\255\310
\061\211\135\042\350\052\252\246\102\263\217\370\271\125\267\261
\267\113\263\376\217\176\007\127\354\357\103\333\146\142\025\141
\317\140\015\244\330\336\370\340\303\142\010\075\124\023\353\111
\312\131\124\205\046\345\053\217\033\237\353\365\241\221\302\063
\111\330\103\143\152\122\113\322\217\350\160\121\115\321\211\151
\173\307\160\366\263\334\022\164\333\173\135\113\126\323\226\277
\025\167\241\260\364\242\045\362\257\034\222\147\030\345\364\006
\004\357\220\271\344\000\344\335\072\265\031\377\002\272\364\074
\356\340\213\353\067\213\354\364\327\254\362\366\360\075\257\335
\165\221\063\031\035\034\100\313\164\044\031\041\223\331\024\376
\254\052\122\307\217\325\004\111\344\215\143\107\210\074\151\203
\313\376\107\275\053\176\117\305\225\256\016\235\324\321\103\300
\147\163\343\024\010\176\345\077\237\163\270\063\012\317\135\077
\064\207\226\212\356\123\350\045\025\002\003\001\000\001\243\201
\262\060\201\257\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\006\060\155\006\010\053\006\001\005\005\007\001
\014\004\141\060\137\241\135\240\133\060\131\060\127\060\125\026
\011\151\155\141\147\145\057\147\151\146\060\041\060\037\060\007
\006\005\053\016\003\002\032\004\024\217\345\323\032\206\254\215
\216\153\303\317\200\152\324\110\030\054\173\031\056\060\045\026
\043\150\164\164\160\072\057\057\154\157\147\157\056\166\145\162
\151\163\151\147\156\056\143\157\155\057\166\163\154\157\147\157
\056\147\151\146\060\035\006\003\125\035\016\004\026\004\024\177
\323\145\247\302\335\354\273\360\060\011\363\103\071\372\002\257
\063\061\063\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\003\202\001\001\000\223\044\112\060\137\142\317\330\032
\230\057\075\352\334\231\055\275\167\366\245\171\042\070\354\304
\247\240\170\022\255\142\016\105\160\144\305\347\227\146\055\230
\011\176\137\257\326\314\050\145\362\001\252\010\032\107\336\371
\371\174\222\132\010\151\040\015\331\076\155\156\074\015\156\330
\346\006\221\100\030\271\370\301\355\337\333\101\252\340\226\040
\311\315\144\025\070\201\311\224\356\242\204\051\013\023\157\216
\333\014\335\045\002\333\244\213\031\104\322\101\172\005\151\112
\130\117\140\312\176\202\152\013\002\252\045\027\071\265\333\177


```
\347\204\145\052\225\212\275\206\336\136\201\026\203\055\020\314
\336\375\250\202\052\155\050\037\015\013\304\345\347\032\046\031
\341\364\021\157\020\265\225\374\347\102\005\062\333\316\235\121
\136\050\266\236\205\323\133\357\245\175\105\100\162\216\267\016
\153\016\006\373\063\065\110\161\270\235\047\213\304\145\137\015
\206\166\234\104\172\366\225\134\366\135\062\010\063\244\124\266
\030\077\150\134\362\102\112\205\070\124\203\137\321\350\054\362
\254\021\326\250\355\143\152
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "VeriSign Class 3 Public Primary Certification Authority - G5"

Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c) 2006 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

Serial Number:18:da:d1:9e:26:7d:e8:bb:4a:21:58:cd:cc:6b:3b:4a

Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G5,OU=(c)

2006 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

Not Valid Before: Wed Nov 08 00:00:00 2006

Not Valid After: Wed Jul 16 23:59:59 2036

Fingerprint (MD5): cb:17:e4:31:67:3e:e2:09:fe:45:57:93:f3:0a:fa:1c

Fingerprint (SHA1): 4e:b6:d5:78:49:9b:1c:cf:5f:58:1e:ad:56:be:3d:9b:67:44:a5:e5

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G5"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\116\266\325\170\111\233\034\317\137\130\036\255\126\276\075\233
\147\104\245\345
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\313\027\344\061\147\076\342\011\376\105\127\223\363\012\372\034
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\062\060\060\066\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
```

```
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\065
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\030\332\321\236\046\175\350\273\112\041\130\315\314\153
\073\112
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only

Certificate

Certificate "Swisscom Root CA 1"

Issuer: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

Serial Number:5c:0b:85:5c:0b:e7:59:41:df:57:cc:3f:7f:9d:a8:36

Subject: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

Not Valid Before: Thu Aug 18 12:06:20 2005

Not Valid After: Mon Aug 18 22:06:20 2025

Fingerprint (MD5): f8:38:7c:77:88:df:2c:16:68:2e:c2:e2:52:4b:b8:f9

Fingerprint (SHA1): 5f:3a:fc:0a:8b:64:f6:86:67:34:74:df:7e:a9:a2:fe:f9:fa:7a:51

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swisscom Root CA 1"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\061
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
```

\164\040\103\101\040\061

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\134\013\205\134\013\347\131\101\337\127\314\077\177\235
\250\066

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\331\060\202\003\301\240\003\002\001\002\002\020\134
\013\205\134\013\347\131\101\337\127\314\077\177\235\250\066\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\144
\061\013\060\011\006\003\125\004\006\023\002\143\150\061\021\060
\017\006\003\125\004\012\023\010\123\167\151\163\163\143\157\155
\061\045\060\043\006\003\125\004\013\023\034\104\151\147\151\164
\141\154\040\103\145\162\164\151\146\151\143\141\164\145\040\123
\145\162\166\151\143\145\163\061\033\060\031\006\003\125\004\003
\023\022\123\167\151\163\163\143\157\155\040\122\157\157\164\040
\103\101\040\061\060\036\027\015\060\065\060\070\061\070\061\062
\060\066\062\060\132\027\015\062\065\060\070\061\070\062\062\060
\066\062\060\132\060\144\061\013\060\011\006\003\125\004\006\023
\002\143\150\061\021\060\017\006\003\125\004\012\023\010\123\167
\151\163\163\143\157\155\061\045\060\043\006\003\125\004\013\023
\034\104\151\147\151\164\141\154\040\103\145\162\164\151\146\151
\143\141\164\145\040\123\145\162\166\151\143\145\163\061\033\060
\031\006\003\125\004\003\023\022\123\167\151\163\163\143\157\155
\040\122\157\157\164\040\103\101\040\061\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\320\271\260\250\014
\331\273\077\041\370\033\325\063\223\200\026\145\040\165\262\075
\233\140\155\106\310\214\061\157\027\303\372\232\154\126\355\074
\305\221\127\303\315\253\226\111\220\052\031\113\036\243\155\127
\335\361\053\142\050\165\105\136\252\326\133\372\013\045\330\241
\026\371\034\304\056\346\225\052\147\314\320\051\156\074\205\064
\070\141\111\261\000\237\326\072\161\137\115\155\316\137\271\251
\344\211\177\152\122\372\312\233\362\334\251\371\235\231\107\077
\116\051\137\264\246\215\135\173\013\231\021\003\003\376\347\333
\333\243\377\035\245\315\220\036\001\037\065\260\177\000\333\220
\157\306\176\173\321\356\172\172\247\252\014\127\157\244\155\305
\023\073\260\245\331\355\062\034\264\136\147\213\124\334\163\207
\345\323\027\174\146\120\162\135\324\032\130\301\331\317\330\211
\002\157\247\111\264\066\135\320\244\336\007\054\266\165\267\050
\221\326\227\276\050\365\230\036\352\133\046\311\275\260\227\163
\332\256\221\046\353\150\301\371\071\025\326\147\113\012\155\117
\313\317\260\344\102\161\214\123\171\347\356\341\333\035\240\156
\035\214\032\167\065\134\026\036\053\123\037\064\213\321\154\374
\362\147\007\172\365\255\355\326\232\253\241\261\113\341\314\067
\137\375\177\315\115\256\270\037\234\103\371\052\130\125\103\105
\274\226\315\160\016\374\311\343\146\272\116\215\073\201\313\025
\144\173\271\224\350\135\063\122\205\161\056\117\216\242\006\021

\121\311\343\313\241\156\061\010\144\014\302\322\074\365\066\350
\327\320\016\170\043\040\221\311\044\052\145\051\133\042\367\041
\316\203\136\244\363\336\113\323\150\217\106\165\134\203\011\156
\051\153\304\160\214\365\235\327\040\057\377\106\322\053\070\302
\057\165\034\075\176\332\245\357\036\140\205\151\102\323\314\370
\143\376\036\103\071\205\246\266\143\101\020\263\163\036\274\323
\372\312\175\026\107\342\247\325\320\243\212\012\010\226\142\126
\156\064\333\331\002\271\060\165\343\004\322\347\217\302\260\021
\100\012\254\325\161\002\142\213\061\276\335\306\043\130\061\102
\103\055\164\371\306\236\246\212\017\351\376\277\203\346\103\127
\044\272\357\106\064\252\327\022\001\070\355\002\003\001\000\001
\243\201\206\060\201\203\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\035\006\003\125\035\041\004\026\060
\024\060\022\006\007\140\205\164\001\123\000\001\006\007\140\205
\164\001\123\000\001\060\022\006\003\125\035\023\001\001\377\004
\010\060\006\001\001\377\002\001\007\060\037\006\003\125\035\043
\004\030\060\026\200\024\003\045\057\336\157\202\001\072\134\054
\334\053\241\151\265\147\324\214\323\375\060\035\006\003\125\035
\016\004\026\004\024\003\045\057\336\157\202\001\072\134\054\334
\053\241\151\265\147\324\214\323\375\060\015\006\011\052\206\110
\206\367\015\001\001\005\005\000\003\202\002\001\000\065\020\313
\354\246\004\015\015\017\315\300\333\253\250\362\210\227\014\337
\223\057\115\174\100\126\061\172\353\244\017\140\315\172\363\276
\303\047\216\003\076\244\335\022\357\176\036\164\006\074\077\061
\362\034\173\221\061\041\264\360\320\154\227\324\351\227\262\044
\126\036\126\303\065\275\210\005\017\133\020\032\144\341\307\202
\060\371\062\255\236\120\054\347\170\005\320\061\261\132\230\212
\165\116\220\134\152\024\052\340\122\107\202\140\346\036\332\201
\261\373\024\013\132\361\237\322\225\272\076\320\033\326\025\035
\243\276\206\325\333\017\300\111\144\273\056\120\031\113\322\044
\370\335\036\007\126\320\070\240\225\160\040\166\214\327\335\036
\336\237\161\304\043\357\203\023\134\243\044\025\115\051\100\074
\152\304\251\330\267\246\104\245\015\364\340\235\167\036\100\160
\046\374\332\331\066\344\171\344\265\077\274\233\145\276\273\021
\226\317\333\306\050\071\072\010\316\107\133\123\132\305\231\376
\135\251\335\357\114\324\306\245\255\002\346\214\007\022\036\157
\003\321\157\240\243\363\051\275\022\307\120\242\260\177\210\251
\231\167\232\261\300\245\071\056\134\174\151\342\054\260\352\067
\152\244\341\132\341\365\120\345\203\357\245\273\052\210\347\214
\333\375\155\136\227\031\250\176\146\165\153\161\352\277\261\307
\157\240\364\216\244\354\064\121\133\214\046\003\160\241\167\325
\001\022\127\000\065\333\043\336\016\212\050\231\375\261\020\157
\113\377\070\055\140\116\054\234\353\147\265\255\111\356\113\037
\254\257\373\015\220\132\146\140\160\135\252\315\170\324\044\356
\310\101\240\223\001\222\234\152\236\374\271\044\305\263\025\202
\176\276\256\225\053\353\261\300\332\343\001\140\013\136\151\254
\204\126\141\276\161\027\376\035\023\017\376\306\207\105\351\376
\062\240\032\015\023\244\224\125\161\245\026\213\272\312\211\260

```
\262\307\374\217\330\124\265\223\142\235\316\317\131\373\075\030
\316\052\313\065\025\202\135\377\124\042\133\161\122\373\267\311
\376\140\233\000\101\144\360\252\052\354\266\102\103\316\211\146
\201\310\213\237\071\124\003\045\323\026\065\216\204\320\137\372
\060\032\365\232\154\364\016\123\371\072\133\321\034
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Swisscom Root CA 1"

Issuer: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

Serial Number:5c:0b:85:5c:0b:e7:59:41:df:57:cc:3f:7f:9d:a8:36

Subject: CN=Swisscom Root CA 1,OU=Digital Certificate Services,O=Swisscom,C=ch

Not Valid Before: Thu Aug 18 12:06:20 2005

Not Valid After: Mon Aug 18 22:06:20 2025

Fingerprint (MD5): f8:38:7c:77:88:df:2c:16:68:2e:c2:e2:52:4b:b8:f9

Fingerprint (SHA1): 5f:3a:fc:0a:8b:64:f6:86:67:34:74:df:7e:a9:a2:fe:f9:fa:7a:51

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swisscom Root CA 1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\137\072\374\012\213\144\366\206\147\064\164\337\176\251\242\376
\371\372\172\121
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\370\070\174\167\210\337\054\026\150\056\302\342\122\113\270\371
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\144\061\013\060\011\006\003\125\004\006\023\002\143\150\061
\021\060\017\006\003\125\004\012\023\010\123\167\151\163\163\143
\157\155\061\045\060\043\006\003\125\004\013\023\034\104\151\147
\151\164\141\154\040\103\145\162\164\151\146\151\143\141\164\145
\040\123\145\162\166\151\143\145\163\061\033\060\031\006\003\125
\004\003\023\022\123\167\151\163\163\143\157\155\040\122\157\157
\164\040\103\101\040\061
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\134\013\205\134\013\347\131\101\337\127\314\077\177\235
\250\066
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Microsec e-Szigno Root CA"
Issuer: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU
Serial Number:cc:b8:e7:bf:4e:29:1a:fd:a2:dc:66:a5:1c:2c:0f:11
Subject: CN=Microsec e-Szigno
Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU
Not Valid Before: Wed Apr 06 12:28:44 2005
Not Valid After: Thu Apr 06 12:28:44 2017
Fingerprint (MD5): f0:96:b6:2f:c5:10:d5:67:8e:83:25:32:e8:5e:2e:e5
Fingerprint (SHA1): 23:88:c9:d3:71:cc:9e:96:3d:ff:7d:3c:a7:ce:fc:d6:25:ec:19:0d

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsec e-Szigno Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL

\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157
\164\040\103\101

END

CKA_ID
UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL
\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003
\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101
\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157
\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157
\164\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\314\270\347\277\116\051\032\375\242\334\146\245\034
\054\017\021

END

CKA_VALUE MULTILINE_OCTAL
\060\202\007\250\060\202\006\220\240\003\002\001\002\002\021\000

\314\270\347\277\116\051\032\375\242\334\146\245\034\054\017\021
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061\021
\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145\163
\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143\162
\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003\125
\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101\061
\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157\163
\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157\164
\040\103\101\060\036\027\015\060\065\060\064\060\066\061\062\062\070
\070\064\064\132\027\015\061\067\060\064\060\066\061\062\062\070
\064\064\132\060\162\061\013\060\011\006\003\125\004\006\023\002
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\022\006\003\125\004\013\023\013\145\055\123\172\151\147\156\157
\040\103\101\061\042\060\040\006\003\125\004\003\023\031\115\151
\143\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040
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\354\057\356\071\363\152\147\113\213\202\317\042\370\145\125\376
\054\313\057\175\110\172\075\165\371\252\240\047\273\170\302\006
\312\121\302\176\146\113\257\315\242\247\115\002\202\077\202\254
\205\306\341\017\220\107\231\224\012\161\162\223\052\311\246\300
\276\074\126\114\163\222\047\361\153\265\365\375\374\060\005\140
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\334\101\037\311\213\161\326\124\024\343\213\124\170\077\276\364
\142\073\133\365\243\354\325\222\164\342\164\060\357\001\333\341
\324\253\231\233\052\153\370\275\246\034\206\043\102\137\354\111
\336\232\213\133\364\162\072\100\305\111\076\245\276\216\252\161
\353\154\372\365\032\344\152\375\173\175\125\100\357\130\156\346
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\055\163\172\151\147\156\157\056\150\165\057\157\143\163\160\060
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\160\072\057\057\167\167\167\056\145\055\163\172\151\147\156\157
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\060\202\001\142\006\014\053\006\001\004\001\201\250\030\002\001
\001\001\060\202\001\120\060\050\006\010\053\006\001\005\005\007

\002\001\026\034\150\164\164\160\072\057\057\167\167\167\056\145
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\000\372\000\163\000\355\000\164\000\166\000\341\000\156\000\171
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\000\172\000\351\000\163\000\351\000\150\000\145\000\172\000\040
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\000\040\000\141\000\040\000\123\000\172\000\157\000\154\000\147
\000\341\000\154\000\164\000\141\000\164\000\363\000\040\000\123
\000\172\000\157\000\154\000\147\000\341\000\154\000\164\000\141
\000\164\000\341\000\163\000\151\000\040\000\123\000\172\000\141
\000\142\000\341\000\154\000\171\000\172\000\141\000\164\000\141
\000\040\000\163\000\172\000\145\000\162\000\151\000\156\000\164
\000\040\000\153\000\145\000\154\000\154\000\040\000\145\000\154
\000\152\000\341\000\162\000\156\000\151\000\072\000\040\000\150
\000\164\000\164\000\160\000\072\000\057\000\057\000\167\000\167
\000\167\000\056\000\145\000\055\000\163\000\172\000\151\000\147
\000\156\000\157\000\056\000\150\000\165\000\057\000\123\000\132
\000\123\000\132\000\057\060\201\310\006\003\125\035\037\004\201
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\156\157\056\150\165\057\122\157\157\164\103\101\056\143\162\154
\206\201\216\154\144\141\160\072\057\057\154\144\141\160\056\145
\055\163\172\151\147\156\157\056\150\165\057\103\116\075\115\151
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\157\045\062\060\122\157\157\164\045\062\060\103\101\054\117\125
\075\145\055\123\172\151\147\156\157\045\062\060\103\101\054\117
\075\115\151\143\162\157\163\145\143\045\062\060\114\164\144\056
\054\114\075\102\165\144\141\160\145\163\164\054\103\075\110\125
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\143\141\164\151\157\156\114\151\163\164\073\142\151\156\141\162
\171\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\201\226\006\003\125\035\021\004\201\216\060\201\213\201
\020\151\156\146\157\100\145\055\163\172\151\147\156\157\056\150
\165\244\167\060\165\061\043\060\041\006\003\125\004\003\014\032
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\303\263\040\122\157\157\164\040\103\101\061\026\060\024\006\003
\125\004\013\014\015\145\055\123\172\151\147\156\303\263\040\110
\123\132\061\026\060\024\006\003\125\004\012\023\015\115\151\143
\162\157\163\145\143\040\113\146\164\056\061\021\060\017\006\003
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\035\043\004\201\244\060\201\241\200\024\307\240\111\165\026\141
\204\333\061\113\204\322\361\067\100\220\357\116\334\367\241\166
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\162\157\163\145\143\040\145\055\123\172\151\147\156\157\040\122
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\004\026\004\024\307\240\111\165\026\141\204\333\061\113\204\322
\361\067\100\220\357\116\334\367\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\001\001\000\323\023\234\146
\143\131\056\312\134\160\014\374\203\274\125\261\364\216\007\154
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\167\352\150\104\047\353\362\051\335\167\251\325\373\343\324\247
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\356\331\345\044\325\033\337\341\112\033\252\237\307\137\370\172
\021\352\023\223\000\312\212\130\261\356\355\016\115\264\327\250
\066\046\174\340\072\301\325\127\202\361\165\266\375\211\137\332
\363\250\070\237\065\006\010\316\042\225\276\315\325\374\276\133
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\254\106\155\114\364\062\207\264\040\004\340\154\170\260\167\321
\205\106\113\246\022\267\165\350\112\311\126\154\327\222\253\235
\365\111\070\322\117\123\343\125\220\021\333\230\226\306\111\362
\076\364\237\033\340\367\210\334\045\142\231\104\330\163\277\077
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Microsec e-Szigno Root CA"

Issuer: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU

Serial Number:cc:b8:e7:bf:4e:29:1a:fd:a2:dc:66:a5:1c:2c:0f:11

#

Subject: CN=Microsec e-Szigno Root CA,OU=e-Szigno CA,O=Microsec Ltd.,L=Budapest,C=HU

Not Valid Before: Wed Apr 06 12:28:44 2005

Not Valid After: Thu Apr 06 12:28:44 2017

Fingerprint (MD5): f0:96:b6:2f:c5:10:d5:67:8e:83:25:32:e8:5e:2e:e5

Fingerprint (SHA1): 23:88:c9:d3:71:cc:9e:96:3d:ff:7d:3c:a7:ce:fc:d6:25:ec:19:0d

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Microsec e-Szigno Root CA"

CKA_CERT_SHA1_HASH MULTILINE OCTAL

\043\210\311\323\161\314\236\226\075\377\175\074\247\316\374\326

\045\354\031\015

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\360\226\266\057\305\020\325\147\216\203\045\062\350\136\056\345

END

CKA_ISSUER MULTILINE_OCTAL

\060\162\061\013\060\011\006\003\125\004\006\023\002\110\125\061

\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160\145

\163\164\061\026\060\024\006\003\125\004\012\023\015\115\151\143

\162\157\163\145\143\040\114\164\144\056\061\024\060\022\006\003

\125\004\013\023\013\145\055\123\172\151\147\156\157\040\103\101

\061\042\060\040\006\003\125\004\003\023\031\115\151\143\162\157

\163\145\143\040\145\055\123\172\151\147\156\157\040\122\157\157

\164\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\021\000\314\270\347\277\116\051\032\375\242\334\146\245\034

\054\017\021

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "LGPKI"

Issuer: OU=Application CA G2,O=LGPKI,C=JP

Serial Number: 49 (0x31)

Subject: OU=Application CA G2,O=LGPKI,C=JP

Not Valid Before: Fri Mar 31 15:00:00 2006

Not Valid After: Thu Mar 31 14:59:59 2016

Fingerprint (MD5): f3:d7:52:a8:75:fd:18:ec:e1:7d:35:b1:70:6e:a5:9c

Fingerprint (SHA1): 96:83:38:f1:13:e3:6a:7b:ab:dd:08:f7:77:63:91:a6:87:36:58:2e

CKA_CLASS

CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "LGPKI"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061

\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061

\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143

\141\164\151\157\156\040\103\101\040\107\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\061

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\240\060\202\002\210\240\003\002\001\002\002\001\061
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\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\032
\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143\141
\164\151\157\156\040\103\101\040\107\062\060\036\027\015\060\066
\060\063\063\061\061\065\060\060\060\060\132\027\015\061\066\060
\063\063\061\061\064\065\071\065\071\132\060\071\061\013\060\011
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\004\012\023\005\114\107\120\113\111\061\032\060\030\006\003\125
\004\013\023\021\101\160\160\154\151\143\141\164\151\157\156\040
\103\101\040\107\062\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\271\065\306\020\370\333\150\333\007\304
\100\114\260\035\036\066\334\303\101\366\317\125\025\155\010\177
\134\306\150\125\345\347\127\361\226\121\346\341\115\170\017\156
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\343\256\011\117\204\104\266\142\233\000\121\150\270\072\255\354
\144\321\062\113\351\224\104\203\264\016\316\041\211\153\260\066
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\250\374\031\000\100\056\042\270\172\063\101\365\170\375\132\161
\347\202\331\110\210\134\354\250\205\207\055\155\200\211\147\032
\151\276\020\300\132\216\355\210\175\076\157\054\070\153\067\316
\107\330\242\061\060\336\176\123\145\154\213\206\123\101\040\154
\275\110\245\176\257\000\132\126\022\130\201\321\334\211\131\371
\265\356\370\115\232\330\104\051\213\171\247\367\042\252\352\174
\134\264\026\210\040\015\002\003\001\000\001\243\201\262\060\201
\257\060\035\006\003\125\035\016\004\026\004\024\177\270\135\216
\304\030\153\306\175\314\056\351\256\316\064\347\027\135\340\241
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\114\006\003\125\035\037\004\105\060\103\060\101\240\077\240
\075\244\073\060\071\061\013\060\011\006\003\125\004\006\023\002
\112\120\061\016\060\014\006\003\125\004\012\023\005\114\107\120
\113\111\061\032\060\030\006\003\125\004\013\023\021\101\160\160

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\037\006\003\125\035\043\004\030\060\026\200\024\177\270\135\216
\304\030\153\306\175\314\056\351\256\316\064\347\027\135\340\241
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\117\052\276\167\344\312\204\374\035\353\233\042\100\325\364\373
\150\207\162\374\107\135\152\016\122\112\343\265\135\110\306\042
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\206\323\214\076\172\057\206\105\216\203\062\046\133\277\123\312
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\356\266\313\000
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "LGPKI"

Issuer: OU=Application CA G2,O=LGPKI,C=JP

Serial Number: 49 (0x31)

Subject: OU=Application CA G2,O=LGPKI,C=JP

Not Valid Before: Fri

Mar 31 15:00:00 2006

Not Valid After: Thu Mar 31 14:59:59 2016

Fingerprint (MD5): f3:d7:52:a8:75:fd:18:ec:e1:7d:35:b1:70:6e:a5:9c

Fingerprint (SHA1): 96:83:38:f1:13:e3:6a:7b:ab:dd:08:f7:77:63:91:a6:87:36:58:2e

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "LGPKI"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\226\203\070\361\023\343\152\173\253\335\010\367\167\143\221\246
\207\066\130\056
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\363\327\122\250\165\375\030\354\341\175\065\261\160\156\245\234

END

CKA_ISSUER MULTILINE_OCTAL

\060\071\061\013\060\011\006\003\125\004\006\023\002\112\120\061

\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061

\032\060\030\006\003\125\004\013\023\021\101\160\160\154\151\143

\141\164\151\157\156\040\103\101\040\107\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\061

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "AC RAIZ DNIE"

Issuer: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES

Serial Number:d2:85:70:fd:ae:a7:d6:5f:11:84:15:c6:31:b5:cb

Subject: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES

Not Valid Before: Thu Feb 16 10:37:25 2006

Not Valid After: Fri Feb 08 22:59:59 2036

Fingerprint (MD5): 15:5e:f5:11:7a:a2:c1:15:0e:92:7e:66:fe:3b:84:c3

Fingerprint (SHA1): b3:8f:ec:ec:0b:14:8a:a6:86:c3:d0:0f:01:ec:c8:84:8e:80:85:eb

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AC RAIZ DNIE"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103

\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114

\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125

\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004

\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061

\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103

\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114

\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125

\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004

\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\000\322\205\160\375\256\247\326\137\021\204\025\306\061
\265\313
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\277\060\202\003\247\240\003\002\001\002\002\020\000
\322\205\160\375\256\247\326\137\021\204\025\306\061\265\313\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\135
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\050\060
\046\006\003\125\004\012\014\037\104\111\122\105\103\103\111\117
\116\040\107\105\116\105\122\101\114\040\104\105\040\114\101\040
\120\117\114\111\103\111\101\061\015\060\013\006\003\125\004\013
\014\004\104\116\111\105\061\025\060\023\006\003\125\004\003\014
\014\101\103\040\122\101\111\132\040\104\116\111\105\060\036\027
\015\060\066\060\062\061\066\061\060\063\067\062\065\132\027\015
\063\066\060\062\060\070\062\062\065\071\065\071\132\060\135\061
\013\060\011\006\003\125\004\006\023\002\105\123\061\050\060\046
\006\003\125\004\012\014\037\104\111\122\105\103\103\111\117\116
\040\107\105\116\105\122\101\114\040\104\105\040\114\101\040\120
\117\114\111\103\111\101\061\015\060\013\006\003\125\004\013\014
\004\104\116\111\105\061\025\060\023\006\003\125\004\003\014\014
\101\103\040\122\101\111\132\040\104\116\111\105\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\200\000\255
\014\303\243\040\007\243\143\377\367\064\240\315\356\152\124\010
\027\135\261\001\025\247\346\271\137\212\161\377\014\302\035\352
\067\363\336\223\177\326\005\115\204\262\325\327\034\014\364\304
\221\160\100\016\132\310\230\244\200\350\015\063\300\007\363\267
\365\254\241\070\172\300\146\124\044\374\122\314\060\052\362\303
\304\241\054\166\277\301\300\277\202\361\233\360\150\172\023\100
\310\227\274\034\045\007\010\012\267\226\357\314\051\124\340\346
\145\055\352\262\056\261\011\151\022\116\060\325\330\370\274\000
\200\057\115\223\017\315\056\127\033\063\273\237\060\116\304\245
\313\171\247\373\342\064\030\266\040\236\033\237\135\247\311\072
\255\105\144\263\030\316\021\022\234\155\036\125\105\050\204\234
\127\147\115\371\313\342\213\217\130\011\324\071\377\310\066\322
\070\342\014\145\177\025\016\175\301\007\335\251\042\337\221\000
\304\154\161\064\164\334\071\352\352\117\104\151\177\130\333\130
\012\122\161\053\354\251\035\120\164\063\371\051\152\372\376\231
\364\347\314\105\105\155\312\132\045\242\022\343\316\327\070\005
\071\360\032\011\365\166\131\316\142\157\172\064\015\054\321\274
\004\022\354\075\123\310\372\320\002\313\316\075\041\265\305\340
\071\063\145\317\071\123\311\233\106\371\235\063\363\131\200\010
\101\276\157\113\240\372\112\316\244\166\034\205\342\257\257\024
\235\145\254\367\177\227\344\063\111\246\257\276\316\053\067\361
\056\301\163\005\234\234\140\114\235\060\015\227\124\236\201\142

\273\347\340\057\367\024\007\024\251\167\221\351\334\221\225\216
\323\210\220\063\107\157\161\303\024\151\372\246\055\001\036\033
\352\323\056\342\177\013\334\317\347\042\360\361\101\243\001\222
\345\200\323\276\251\142\250\125\210\013\064\064\354\334\041\025
\252\357\326\042\136\211\365\121\222\023\052\157\200\026\331\261
\015\331\056\370\020\270\302\376\122\105\063\234\035\070\174\334
\025\151\064\163\277\240\054\273\021\173\224\315\370\067\055\157
\075\357\203\132\306\036\233\164\111\217\331\302\215\276\026\166
\120\310\132\321\045\026\366\366\314\214\234\132\060\236\145\276
\320\232\110\223\327\372\150\015\165\061\207\371\367\002\003\001
\000\001\243\173\060\171\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026
\004\024\216\105\364\237\163\305\377\057\033\005\333\001\107\140
\033\003\212\201\267\272\060\067\006\003\125\035\040\004\060\060
\056\060\054\006\004\125\035\040\000\060\044\060\042\006\010\053
\006\001\005\005\007\002\001\026\026\150\164\164\160\072\057\057
\167\167\167\056\144\156\151\145\056\145\163\057\144\160\143\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\002\001\000\165\345\163\311\121\121\057\213\031\240\207\351\377
\256\066\066\246\374\101\037\343\036\327\161\140\031\306\157\232
\002\060\275\142\161\255\163\376\221\055\116\344\046\100\104\251
\256\170\046\043\061\151\334\232\163\226\036\111\121\013\340\357
\301\270\103\357\161\234\356\101\267\305\120\037\062\204\236\042
\206\361\367\037\217\331\255\053\116\332\227\050\227\273\226\232
\032\370\261\331\172\004\363\124\231\022\031\226\025\200\147\071
\377\002\137\172\374\125\102\120\132\346\271\242\377\270\250\142
\036\024\315\331\077\276\243\145\110\305\073\327\067\316\015\372
\050\220\332\277\371\343\121\107\045\175\112\323\147\115\207\252
\142\274\136\354\172\200\104\174\367\237\012\275\145\127\224\312
\362\021\146\326\122\177\344\072\160\165\004\315\073\227\324\066
\162\367\121\126\277\064\365\322\101\341\264\332\250\103\376\153
\022\111\022\264\135\317\042\102\226\214\010\043\046\214\262\020
\116\135\252\123\356\001\057\165\345\271\242\021\063\304\327\152
\375\370\016\312\156\202\331\347\273\131\043\116\265\371\021\035
\057\153\043\365\173\021\040\352\101\022\220\062\106\333\061\073
\251\301\133\163\150\072\106\033\214\376\227\267\126\271\141\231
\314\116\360\203\372\067\361\336\034\235\034\161\213\003\223\303
\304\163\202\056\250\230\035\144\242\232\214\367\124\010\115\317
\352\201\313\365\133\011\231\143\257\165\214\226\370\171\065\325
\334\353\101\201\171\070\204\136\157\361\157\142\166\333\221\316
\132\205\140\071\035\133\342\052\057\103\045\333\302\172\044\323
\025\260\242\361\214\240\175\153\110\011\023\377\242\114\146\212
\354\160\122\011\123\214\060\314\270\325\272\044\334\060\231\076
\241\136\267\337\201\254\354\067\276\116\233\047\130\336\176\241
\233\124\177\006\266\057\344\062\120\375\347\020\273\250\315\332
\030\033\324\143\146\075\352\121\161\071\364\234\076\337\132\364
\332\307\114\046\355\213\265\041\272\064\171\002\163\141\020\332

```
\230\061\250\140\313\176\007\247\320\267\005\103\211\133\315\205
\046\331\260\121\257\367\214\122\252\022\247\130\337\222\233\147
\362\235\362\346\364\151\061\364\026\347\336\167\133\036\335\232
\005\001\255
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

#

Microsoft Code Signing Only Certificate

Trust for "AC RAIZ DNIE"

Issuer: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES

Serial Number:d2:85:70:fd:ae:a7:d6:5f:11:84:15:c6:31:b5:cb

Subject: CN=AC RAIZ DNIE,OU=DNIE,O=DIRECCION GENERAL DE LA POLICIA,C=ES

Not Valid Before: Thu Feb 16 10:37:25 2006

Not Valid After: Fri Feb 08 22:59:59 2036

Fingerprint (MD5): 15:5e:f5:11:7a:a2:c1:15:0e:92:7e:66:fe:3b:84:c3

Fingerprint (SHA1): b3:8f:ec:ec:0b:14:8a:a6:86:c3:d0:0f:01:ec:c8:84:8e:80:85:eb

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "AC RAIZ DNIE"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\263\217\354\354\013\024\212\246\206\303\320\017\001\354\310\204
\216\200\205\353
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\025\136\365\021\172\242\301\025\016\222\176\146\376\073\204\303
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\050\060\046\006\003\125\004\012\014\037\104\111\122\105\103\103
\111\117\116\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\120\117\114\111\103\111\101\061\015\060\013\006\003\125
\004\013\014\004\104\116\111\105\061\025\060\023\006\003\125\004
\003\014\014\101\103\040\122\101\111\132\040\104\116\111\105
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END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

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\002\020\000\322\205\160\375\256\247\326\137\021\204\025\306\061
\265\313
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "EC-ACC"

Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu https://www.catcert.net/verarrel(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

Serial Number: -23701579247955709139626555126524820479 (0x-11d4c2142bde21eb579d53fb0c223bff)

#

Subject: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu https://www.catcert.net/verarrel(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

Not Valid Before: Tue Jan 07 23:00:00 2003

Not Valid After: Tue Jan 07 22:59:59 2031

Fingerprint (MD5): eb:f5:9d:29:0d:61:f9:42:1f:7c:c2:ba:6d:e3:15:09

Fingerprint (SHA1): 28:90:3a:63:5b:52:80:fa:e6:77:4c:0b:6d:a7:d6:ba:a6:4a:f2:e8

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "EC-ACC"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143
\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006
\105\103\055\101\103\103

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143
\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151

\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006
\105\103\055\101\103\103

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\356\053\075\353\324\041\336\024\250\142\254\004\363\335
\304\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\126\060\202\004\076\240\003\002\001\002\002\020\356
\053\075\353\324\041\336\024\250\142\254\004\363\335\304\001\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\363\061\013\060\011\006\003\125\004\006\023\002\105\123\061\073
\060\071\006\003\125\004\012\023\062\101\147\145\156\143\151\141
\040\103\141\164\141\154\141\156\141\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\040\050\116\111\106\040\121
\055\060\070\060\061\061\067\066\055\111\051\061\050\060\046\006
\003\125\004\013\023\037\123\145\162\166\145\151\163\040\120\165
\142\154\151\143\163\040\144\145\040\103\145\162\164\151\146\151
\143\141\143\151\157\061\065\060\063\006\003\125\004\013\023\054
\126\145\147\145\165\040\150\164\164\160\163\072\057\057\167\167
\167\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145
\162\141\162\162\145\154\040\050\143\051\060\063\061\065\060\063
\006\003\125\004\013\023\054\112\145\162\141\162\161\165\151\141
\040\105\156\164\151\164\141\164\163\040\144\145\040\103\145\162
\164\151\146\151\143\141\143\151\157\040\103\141\164\141\154\141
\156\145\163\061\017\060\015\006\003\125\004\003\023\006\105\103
\055\101\103\103\060\036\027\015\060\063\060\061\060\067\062\063
\060\060\060\060\132\027\015\063\061\060\061\060\067\062\062\065
\071\065\071\132\060\201\363\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\073\060\071\006\003\125\004\012\023\062\101
\147\145\156\143\151\141\040\103\141\164\141\154\141\156\141\040
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040
\050\116\111\106\040\121\055\060\070\060\061\061\067\066\055\111
\051\061\050\060\046\006\003\125\004\013\023\037\123\145\162\166
\145\151\163\040\120\165\142\154\151\143\163\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\061\065\060\063\006
\003\125\004\013\023\054\126\145\147\145\165\040\150\164\164\160
\163\072\057\057\167\167\167\056\143\141\164\143\145\162\164\056
\156\145\164\057\166\145\162\141\162\162\145\154\040\050\143\051
\060\063\061\065\060\063\006\003\125\004\013\023\054\112\145\162

\141\162\161\165\151\141\040\105\156\164\151\164\141\164\163\040
\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040
\103\141\164\141\154\141\156\145\163\061\017\060\015\006\003\125
\004\003\023\006\105\103\055\101\103\103\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\263\042\307\117\342
\227\102\225\210\107\203\100\366\035\027\363\203\163\044\036\121
\363\230\212\303\222\270\377\100\220\005\160\207\140\311\000\251
\265\224\145\031\042\025\027\302\103\154\146\104\232\015\004\076
\071\157\245\113\172\252\143\267\212\104\235\331\143\221\204\146
\340\050\017\272\102\343\156\216\367\024\047\223\151\356\221\016
\243\137\016\261\353\146\242\162\117\022\023\206\145\172\076\333
\117\007\364\247\011\140\332\072\102\231\307\262\177\263\026\225
\034\307\371\064\265\224\205\325\231\136\240\110\240\176\347\027
\145\270\242\165\270\036\363\345\102\175\257\355\363\212\110\144
\135\202\024\223\330\300\344\377\263\120\162\362\166\366\263\135
\102\120\171\320\224\076\153\014\000\276\330\153\016\116\052\354
\076\322\314\202\242\030\145\063\023\167\236\232\135\032\023\330
\303\333\075\310\227\172\356\160\355\247\346\174\333\161\317\055
\224\142\337\155\326\365\070\276\077\245\205\012\031\270\250\330
\011\165\102\160\304\352\357\313\016\310\064\250\022\042\230\014
\270\023\224\266\113\354\360\320\220\347\047\002\003\001\000\001
\243\201\343\060\201\340\060\035\006\003\125\035\021\004\026\060
\024\201\022\145\143\137\141\143\143\100\143\141\164\143\145\162
\164\056\156\145\164\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004
\024\240\303\213\104\252\067\245\105\277\227\200\132\321\361\170
\242\233\351\135\215\060\177\006\003\125\035\040\004\170\060\166
\060\164\006\013\053\006\001\004\001\365\170\001\003\001\012\060
\145\060\054\006\010\053\006\001\005\005\007\002\001\026\040\150
\164\164\160\163\072\057\057\167\167\167\056\143\141\164\143\145
\162\164\056\156\145\164\057\166\145\162\141\162\162\145\154\060
\065\006\010\053\006\001\005\005\007\002\002\060\051\032\047\126
\145\147\145\165\040\150\164\164\160\163\072\057\057\167\167\167
\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145\162
\141\162\162\145\154\040\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\001\001\000\240\110\133\202\001\366
\115\110\270\071\125\065\234\200\172\123\231\325\132\377\261\161
\073\314\071\011\224\136\326\332\357\276\001\133\135\323\036\330
\375\175\117\315\240\101\340\064\223\277\313\342\206\234\067\222
\220\126\034\334\353\051\005\345\304\236\307\065\337\212\014\315
\305\041\103\351\252\210\345\065\300\031\102\143\132\002\136\244
\110\030\072\205\157\334\235\274\077\235\234\301\207\270\172\141
\010\351\167\013\177\160\253\172\335\331\227\054\144\036\205\277
\274\164\226\241\303\172\022\354\014\032\156\203\014\074\350\162
\106\237\373\110\325\136\227\346\261\241\370\344\357\106\045\224
\234\211\333\151\070\276\354\134\016\126\307\145\121\345\120\210

```
\210\277\102\325\053\075\345\371\272\236\056\263\312\364\163\222
\002\013\276\114\146\353\040\376\271\313\265\231\177\346\266\023
\372\312\113\115\331\356\123\106\006\073\306\116\255\223\132\201
\176\154\052\113\152\005\105\214\362\041\244\061\220\207\154\145
\234\235\245\140\225\072\122\177\365\321\253\010\156\363\356\133
\371\210\075\176\270\157\156\003\344\102
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "EC-ACC"

Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu <https://www.catcert.net/verarrel> (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

Serial Number: -23701579247955709139626555126524820479 (0x-11d4c2142bde21eb579d53fb0c223bff)

Subject: CN=EC-ACC,OU=Jerarquia

Entitats de Certificacio Catalanes,OU=Vegeu <https://www.catcert.net/verarrel> (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

Not Valid Before: Tue Jan 07 23:00:00 2003

Not Valid After: Tue Jan 07 22:59:59 2031

Fingerprint (MD5): eb:f5:9d:29:0d:61:f9:42:1f:7c:c2:ba:6d:e3:15:09

Fingerprint (SHA1): 28:90:3a:63:5b:52:80:fa:e6:77:4c:0b:6d:a7:d6:ba:a6:4a:f2:e8

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "EC-ACC"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\050\220\072\143\133\122\200\372\346\167\114\013\155\247\326\272
\246\112\362\350
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\353\365\235\051\015\141\371\102\037\174\302\272\155\343\025\011
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123
\061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143
\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106
\040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060
\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040
\120\165\142\154\151\143\163\040\144\145\040\103\145\162\164\151
\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013
\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057
\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057
\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065
```

```
\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165
\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103
\145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141
\154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006
\105\103\055\101\103\103
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\356\053\075\353\324\041\336\024\250\142\254\004\363\335
\304\001
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "A-Trust-nQual-03"

Issuer: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT

Serial Number:14:b4:f9

Subject: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT

Not Valid Before: Wed Jul 23 10:38:29 2014

Not Valid After: Wed Jul 23 08:38:29 2025

Fingerprint (MD5): a6:b2:ec:05:6b:b4:86:f0:e4:05:05:b0:d3:26:fc:fa

Fingerprint (SHA1): 4c:ae:e3:89:31:d1:9a:e7:3b:31:aa:75:ca:33:d6:21:29:0f:a7:5e

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "A-Trust-nQual-03"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006\003
\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121\165
\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020
\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060\063
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006\003
\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121\165
\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020
\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060\063
END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\003\024\264\371

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\317\060\202\002\267\240\003\002\001\002\002\003\024
\264\371\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166
\145\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006
\003\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121
\165\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014
\020\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060
\063\060\036\027\015\061\064\060\067\062\063\061\060\063\070\062
\071\132\027\015\062\065\060\067\062\063\060\070\063\070\062\071
\132\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101
\124\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162
\165\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150
\145\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151
\155\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166
\145\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006
\003\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121
\165\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014
\020\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060
\063\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\255\075\141\156\003\363\220\073\300\101\013\204\200\315
\354\052\243\235\153\273\156\302\102\204\367\121\024\341\240\250
\055\121\243\121\362\336\043\360\064\104\377\224\353\314\005\043
\225\100\271\007\170\245\045\366\012\275\105\206\350\331\275\300
\004\216\205\104\141\357\177\247\311\372\301\045\314\205\054\143
\077\005\140\163\111\005\340\140\170\225\020\113\334\371\021\131
\316\161\177\100\233\212\252\044\337\013\102\342\333\126\274\112
\322\245\014\233\267\103\076\335\203\323\046\020\002\317\352\043
\304\111\116\345\323\351\264\210\253\014\256\142\222\324\145\207

\331\152\327\364\205\237\344\063\042\045\245\345\310\063\272\303
\307\101\334\137\306\152\314\000\016\155\062\250\266\207\066\000
\142\167\233\036\037\064\313\220\074\170\210\164\005\353\171\365
\223\161\145\312\235\307\153\030\055\075\134\116\347\325\370\077
\061\175\217\207\354\012\042\057\043\351\376\273\175\311\340\364
\354\353\174\304\260\303\055\142\265\232\161\326\261\152\350\354
\331\355\325\162\354\276\127\001\316\005\125\237\336\321\140\210
\020\263\002\003\001\000\001\243\066\060\064\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\021\006\003
\125\035\016\004\012\004\010\104\152\225\147\125\171\021\117\060
\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202
\001\001\000\022\214\244\075\340\000\377\250\212\233\246\047\177
\033\022\034\127\276\016\330\232\237\154\200\037\302\366\116\243
\035\160\167\222\007\376\313\327\036\367\272\340\336\142\113\265
\205\262\220\001\171\337\136\173\137\361\037\225\202\064\001\117
\014\064\150\066\371\327\256\047\172\326\034\025\262\264\203\313
\225\131\120\252\072\137\060\177\162\133\001\114\107\113\326\353
\160\122\244\263\340\211\050\372\372\251\016\207\372\306\365\243
\335\166\355\317\110\101\046\130\077\164\277\200\300\032\033\015
\034\111\071\154\236\213\004\320\376\124\257\233\307\261\252\146
\025\135\325\371\123\243\140\333\066\030\264\256\341\164\002\142
\364\210\246\307\303\046\237\025\260\237\301\061\204\275\032\241
\257\103\377\152\031\255\037\300\106\304\061\247\133\346\147\011
\267\017\304\052\016\040\046\330\114\203\023\237\073\227\225\270
\044\067\074\001\026\071\356\145\254\352\323\166\364\310\226\032
\141\122\351\354\346\032\010\166\134\213\270\332\236\300\255\354
\024\236\215\343\253\024\354\270\311\056\244\212\140\100\174\272
\312\010\213

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "A-Trust-nQual-03"

Issuer: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT

Serial Number: 14:b4:f9

Subject: CN=A-Trust-nQual-03,OU=A-Trust-nQual-03,O=A-Trust Ges. f. Sicherheitssysteme im elektr.
Datenverkehr GmbH,C=AT

Not Valid Before: Wed Jul 23 10:38:29 2014

Not Valid After: Wed Jul 23 08:38:29 2025

Fingerprint (MD5): a6:b2:ec:05:6b:b4:86:f0:e4:05:05:b0:d3:26:fc:fa

Fingerprint (SHA1): 4c:ae:e3:89:31:d1:9a:e7:3b:31:aa:75:ca:33:d6:21:29:0f:a7:5e

CKA_CLASS

```

CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "A-Trust-nQual-03"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\114\256\343\211\061\321\232\347\073\061\252\165\312\063\326\041
\051\017\247\136
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\246\262\354\005\153\264\206\360\344\005\005\260\323\046\374\372
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\215\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\110\060\106\006\003\125\004\012\014\077\101\055\124\162\165
\163\164\040\107\145\163\056\040\146\056\040\123\151\143\150\145
\162\150\145\151\164\163\163\171\163\164\145\155\145\040\151\155
\040\145\154\145\153\164\162\056\040\104\141\164\145\156\166\145
\162\153\145\150\162\040\107\155\142\110\061\031\060\027\006\003
\125\004\013\014\020\101\055\124\162\165\163\164\055\156\121\165
\141\154\055\060\063\061\031\060\027\006\003\125\004\003\014\020
\101\055\124\162\165\163\164\055\156\121\165\141\154\055\060\063
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\024\264\371
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "KISA RootCA 1"
# Issuer: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR
# Serial Number: 4 (0x4)
# Subject: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR
# Not Valid Before: Wed Aug 24 08:05:46 2005
# Not Valid After: Sun Aug 24 08:05:46 2025
# Fingerprint (MD5): 68:9b:17:c6:54:e0:e0:99:55:16:42:f7:5a:86:d8
# Fingerprint (SHA1): 02:72:68:29:3e:5f:5d:17:aa:a4:b3:c3:e6:36:1e:1f:92:57:5e:aa
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "KISA RootCA 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT

```


MULTILINE_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026
\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157
\157\164\103\101\040\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\144\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103
\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164
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CKA_SERIAL_NUMBER MULTILINE_OCTAL

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CKA_VALUE MULTILINE_OCTAL

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CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "KISA RootCA 1"

Issuer: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR

Serial Number: 4 (0x4)

Subject: CN=KISA RootCA 1,OU=Korea Certification Authority Central,O=KISA,C=KR

Not Valid

Before: Wed Aug 24 08:05:46 2005

Not Valid After: Sun Aug 24 08:05:46 2025

Fingerprint (MD5): 68:9b:17:c6:54:e0:e0:e0:99:55:16:42:f7:5a:86:d8

Fingerprint (SHA1): 02:72:68:29:3e:5f:5d:17:aa:a4:b3:c3:e6:36:1e:1f:92:57:5e:aa

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

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CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "KISA RootCA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
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\222\127\136\252
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
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END
CKA_ISSUER MULTILINE_OCTAL
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\015\060\013\006\003\125\004\012\014\004\113\111\123\101\061\056
\060\054\006\003\125\004\013\014\045\113\157\162\145\141\040\103
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\150\157\162\151\164\171\040\103\145\156\164\162\141\154\061\026
\060\024\006\003\125\004\003\014\015\113\111\123\101\040\122\157
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CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\004
END
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CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"
# Issuer: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU
# Serial Number: 123 (0x7b)
# Subject: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU
# Not Valid Before: Sun Mar 30 01:47:11 2003
# Not Valid After: Thu Dec 15 01:47:11 2022
# Fingerprint (MD5): d4:80:65:68:24:f9:89:22:28:db:f5:a4:9a:17:8f:14
# Fingerprint
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(SHA1): 01:68:97:e1:a0:b8:f2:c3:b1:34:66:5c:20:a7:27:b7:a1:58:e2:8f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145
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\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004
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\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165
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END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

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CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\173

END

CKA_VALUE MULTILINE_OCTAL

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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"

Issuer: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU

Serial Number: 123 (0x7b)

Subject: 1.2.840.113549.1.9.1=info@netlock.hu,CN=NetLock Minositett Kozjegyzoi (Class QA)
Tanusitvanykiado,OU=Tanusitvanykiadok,O=NetLock Halozatbiztonsagi Kft.,L=Budapest,C=HU

Not Valid Before: Sun Mar 30 01:47:11 2003

Not Valid After: Thu Dec 15 01:47:11 2022

Fingerprint

(MD5): d4:80:65:68:24:f9:89:22:28:db:f5:a4:9a:17:8f:14

Fingerprint (SHA1): 01:68:97:e1:a0:b8:f2:c3:b1:34:66:5c:20:a7:27:b7:a1:58:e2:8f

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "NetLock Minositett Kozjegyzoi (Class QA) Tanusitvanykiado"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\001\150\227\341\240\270\362\303\261\064\146\134\040\247\047\267  
\241\130\342\217
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\324\200\145\150\044\371\211\042\050\333\365\244\232\027\217\024
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\311\061\013\060\011\006\003\125\004\006\023\002\110\125  
\061\021\060\017\006\003\125\004\007\023\010\102\165\144\141\160  
\145\163\164\061\047\060\045\006\003\125\004\012\023\036\116\145  
\164\114\157\143\153\040\110\141\154\157\172\141\164\142\151\172  
\164\157\156\163\141\147\151\040\113\146\164\056\061\032\060\030  
\006\003\125\004\013\023\021\124\141\156\165\163\151\164\166\141  
\156\171\153\151\141\144\157\153\061\102\060\100\006\003\125\004  
\003\023\071\116\145\164\114\157\143\153\040\115\151\156\157\163  
\151\164\145\164\164\040\113\157\172\152\145\147\171\172\157\151  
\040\050\103\154\141\163\163\040\121\101\051\040\124\141\156\165  
\163\151\164\166\141\156\171\153\151\141\144\157\061\036\060\034  
\006\011\052\206\110\206\367\015\001\011\001\026\017\151\156\146  
\157\100\156\145\164\154\157\143\153\056\150\165
```

END

CKA_SERIAL_NUMBER

```
MULTILINE_OCTAL
\002\001\173
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Staat der Nederlanden Root CA"
# Issuer: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL
# Serial Number:98:96:8a
# Subject: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL
# Not Valid Before: Tue Dec 17 09:23:49 2002
#
```

```
Not Valid After: Wed Dec 16 09:15:38 2015
# Fingerprint (MD5): 60:84:7c:5a:ce:db:0c:d4:cb:a7:e9:fe:02:c6:a9:c0
# Fingerprint (SHA1): 10:1d:fa:3f:d5:0b:cb:bb:9b:b5:60:0c:19:55:a4:1a:f4:73:3a:04
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Staat der Nederlanden Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
END
```

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\000\230\226\212
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\272\060\202\002\242\240\003\002\001\002\002\004\000
\230\226\212\060\015\006\011\052\206\110\206\367\015\001\001\005
```


\005\000\060\125\061\013\060\011\006\003\125\004\006\023\002\116
\114\061\036\060\034\006\003\125\004\012\023\025\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\061\046\060\044\006\003\125\004\003\023\035\123\164\141\141
\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145
\156\040\122\157\157\164\040\103\101\060\036\027\015\060\062\061
\062\061\067\060\071\062\063\064\071\132\027\015\061\065\061\062
\061\066\060\071\061\065\063\070\132\060\125\061\013\060\011\006
\003\125\004\006\023\002\116\114\061\036\060\034\006\003\125\004
\012\023\025\123\164\141\141\164\040\144\145\162\040\116\145\144
\145\162\154\141\156\144\145\156\061\046\060\044\006\003\125\004
\003\023\035\123\164\141\141\164\040\144\145\162\040\116\145\144
\145\162\154\141\156\144\145\156\040\122\157\157\164\040\103\101
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\230\322\265\121\021\172\201\246\024\230\161\155\276\314\347
\023\033\326\047\016\172\263\152\030\034\266\141\132\325\141\011
\277\336\220\023\307\147\356\335\363\332\305\014\022\236\065\125
\076\054\047\210\100\153\367\334\335\042\141\365\302\307\016\365
\366\325\166\123\115\217\214\274\030\166\067\205\235\350\312\111
\307\322\117\230\023\011\242\076\042\210\234\177\326\362\020\145
\264\356\137\030\325\027\343\370\305\375\342\235\242\357\123\016
\205\167\242\017\341\060\107\356\000\347\063\175\104\147\032\013
\121\350\213\240\236\120\230\150\064\122\037\056\155\001\362\140
\105\362\061\353\251\061\150\051\273\172\101\236\306\031\177\224
\264\121\071\003\177\262\336\247\062\233\264\107\216\157\264\112
\256\345\257\261\334\260\033\141\274\231\162\336\344\211\267\172
\046\135\332\063\111\133\122\234\016\365\212\255\303\270\075\350
\006\152\302\325\052\013\154\173\204\275\126\005\313\206\145\222
\354\104\053\260\216\271\334\160\013\106\332\255\274\143\210\071
\372\333\152\376\043\372\274\344\110\364\147\053\152\021\020\041
\111\002\003\001\000\001\243\201\221\060\201\216\060\014\006\003
\125\035\023\004\005\060\003\001\001\377\060\117\006\003\125\035
\040\004\110\060\106\060\104\006\004\125\035\040\000\060\074\060
\072\006\010\053\006\001\005\005\007\002\001\026\056\150\164\164
\160\072\057\057\167\167\167\056\160\153\151\157\166\145\162\150
\145\151\144\056\156\154\057\160\157\154\151\143\151\145\163\057
\162\157\157\164\055\160\157\154\151\143\171\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125
\035\016\004\026\004\024\250\175\353\274\143\244\164\023\164\000
\354\226\340\323\064\301\054\277\154\370\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\005\204
\207\125\164\066\141\301\273\321\324\306\025\250\023\264\237\244
\376\273\356\025\264\057\006\014\051\362\250\222\244\141\015\374
\253\134\010\133\121\023\053\115\302\052\141\310\370\011\130\374
\055\002\262\071\175\231\146\201\277\156\134\225\105\040\154\346
\171\247\321\330\034\051\374\302\040\047\121\310\361\174\135\064
\147\151\205\021\060\306\000\322\327\363\323\174\266\360\061\127

```
\050\022\202\163\351\063\057\246\125\264\013\221\224\107\234\372
\273\172\102\062\350\256\176\055\310\274\254\024\277\331\017\331
\133\374\301\371\172\225\341\175\176\226\374\161\260\302\114\310
\337\105\064\311\1316\015\362\234\144\010\320\073\303\051\305\262
\355\220\004\301\261\051\221\305\060\157\301\251\162\063\314\376
\135\026\027\054\021\151\347\176\376\305\203\010\337\274\334\042
\072\056\040\151\043\071\126\140\147\220\213\056\166\071\373\021
\210\227\366\174\275\113\270\040\026\147\005\215\342\073\301\162
\077\224\225\067\307\135\271\236\330\223\241\027\217\377\014\146
\025\301\044\174\062\174\003\035\073\241\130\105\062\223
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Staat der Nederlanden Root CA"

Issuer: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL

Serial Number:98:96:8a

Subject: CN=Staat der Nederlanden Root CA,O=Staat der Nederlanden,C=NL

Not Valid Before: Tue Dec 17 09:23:49 2002

Not Valid After: Wed Dec 16 09:15:38 2015

Fingerprint (MD5): 60:84:7c:5a:ce:db:0c:d4:cb:a7:e9:fe:02:c6:a9:c0

Fingerprint (SHA1): 10:1d:fa:3f:d5:0b:cb:bb:9b:b5:60:0c:19:55:a4:1a:f4:73:3a:04

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Staat der Nederlanden

Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\020\035\372\077\325\013\313\273\233\265\140\014\031\125\244\032
\364\163\072\004
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\140\204\174\132\316\333\014\324\313\247\351\376\002\306\251\300
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\125\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\023\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\046\060\044\006\003\125\004\003\023\035\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\122\157\157\164\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\004\000\230\226\212
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "America Online Root Certification Authority
1"
# Issuer: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US
# Serial Number: 1 (0x1)
# Subject: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US
# Not Valid Before: Tue May 28 06:00:00 2002
# Not Valid After: Thu Nov 19 20:43:00 2037
# Fingerprint (MD5): 14:f1:08:ad:9d:fa:64:e2:89:e7:1c:cf:a8:ad:7d:5e
# Fingerprint (SHA1): 39:21:c1:15:c1:5d:0e:ca:5c:cb:5b:c4:f0:7d:21:d8:05:0b:56:6a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "America Online Root Certification Authority 1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\244\060\202\002\214\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
```

\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\034
\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143\141
\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060\064
\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040\117
\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\061\060\036\027\015\060\062\060\065\062\070\060\066
\060\060\060\060\132\027\015\063\067\061\061\061\071\062\060\064
\063\060\060\132\060\143\061\013\060\011\006\003\125\004\006\023
\002\125\123\061\034\060\032\006\003\125\004\012\023\023\101\155
\145\162\151\143\141\040\117\156\154\151\156\145\040\111\156\143
\056\061\066\060\064\006\003\125\004\003\023\055\101\155\145\162
\151\143\141\040\117\156\154\151\156\145\040\122\157\157\164\040
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165
\164\150\157\162\151\164\171\040\061\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\250\057\350\244\151\006
\003\107\303\351\052\230\377\031\242\160\232\306\120\262\176\245
\337\150\115\033\174\017\266\227\150\175\055\246\213\227\351\144
\206\311\243\357\240\206\277\140\145\234\113\124\210\302\110\305
\112\071\277\024\343\131\125\345\031\264\164\310\264\005\071\134
\026\245\342\225\005\340\022\256\131\213\242\063\150\130\034\246
\324\025\267\330\237\327\334\161\253\176\232\277\233\216\063\017
\042\375\037\056\347\007\066\357\142\071\305\335\313\272\045\024
\043\336\014\306\075\074\316\202\010\346\146\076\332\121\073\026
\072\243\005\177\240\334\207\325\234\374\162\251\240\175\170\344
\267\061\125\036\145\273\324\141\260\041\140\355\020\062\162\305
\222\045\036\370\220\112\030\170\107\337\176\060\067\076\120\033
\333\034\323\153\232\206\123\007\260\357\254\006\170\370\204\231
\376\041\215\114\200\266\014\202\366\146\160\171\032\323\117\243
\317\361\317\106\260\113\017\076\335\210\142\270\214\251\011\050
\073\172\307\227\341\036\345\364\237\300\300\256\044\240\310\241
\331\017\326\173\046\202\151\062\075\247\002\003\001\000\001\243
\143\060\141\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\000
\255\331\243\366\171\366\156\164\251\177\063\075\201\027\327\114
\317\063\336\060\037\006\003\125\035\043\004\030\060\026\200\024
\000\255\331\243\366\171\366\156\164\251\177\063\075\201\027\327
\114\317\063\336\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001
\005\005\000\003\202\001\001\000\174\212\321\037\030\067\202\340
\270\260\243\355\126\225\310\142\141\234\005\242\315\302\142\046
\141\315\020\026\327\314\264\145\064\320\021\212\255\250\251\005
\146\357\164\363\155\137\235\231\257\366\213\373\353\122\262\005
\230\242\157\052\305\124\275\045\275\137\256\310\206\352\106\054
\301\263\275\301\351\111\160\030\026\227\010\023\214\040\340\033
\056\072\107\313\036\344\000\060\225\133\364\105\243\300\032\260
\001\116\253\275\300\043\156\143\077\200\112\305\007\355\334\342

```
\157\307\301\142\361\343\162\326\004\310\164\147\013\372\210\253
\241\001\310\157\360\024\257\322\231\315\121\223\176\355\056\070
\307\275\316\106\120\075\162\343\171\045\235\233\210\053\020\040
\335\245\270\062\237\215\340\051\337\041\164\206\202\333\057\202
\060\306\307\065\206\263\371\226\137\106\333\014\105\375\363\120
\303\157\306\303\110\255\106\246\341\047\107\012\035\016\233\266
\302\167\177\143\362\340\175\032\276\374\340\337\327\307\247\154
\260\371\256\272\074\375\164\264\021\350\130\015\200\274\323\250
\200\072\231\355\165\314\106\173
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "America Online Root Certification Authority 1"

Issuer: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US

Serial Number: 1 (0x1)

Subject: CN=America Online Root Certification Authority 1,O=America Online Inc.,C=US

Not Valid Before: Tue May 28 06:00:00 2002

Not Valid After: Thu Nov 19 20:43:00

2037

Fingerprint (MD5): 14:f1:08:ad:9d:fa:64:e2:89:e7:1c:cf:a8:ad:7d:5e

Fingerprint (SHA1): 39:21:c1:15:c1:5d:0e:ca:5c:cb:5b:c4:f0:7d:21:d8:05:0b:56:6a

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "America Online Root Certification Authority 1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\071\041\301\025\301\135\016\312\134\313\133\304\360\175\041\330
\005\013\126\152
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\024\361\010\255\235\372\144\342\211\347\034\317\250\255\175\136
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\101\155\145\162\151\143
\141\040\117\156\154\151\156\145\040\111\156\143\056\061\066\060
\064\006\003\125\004\003\023\055\101\155\145\162\151\143\141\040
\117\156\154\151\156\145\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\061
```

END

CKA_SERIAL_NUMBER

```
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Juur-SK"
# Issuer: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.113549.1.9.1=pki@sk.ee
# Serial Number:3b:8e:4b:fc
# Subject: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.113549.1.9.1=pki@sk.ee
# Not Valid Before: Thu Aug 30 14:23:01 2001
# Not Valid After: Fri Aug 26 14:23:01 2016
# Fingerprint (MD5): aa:8e:5d:d9:f8:db:0a:58:b7:8d:26:87:6c:82:35:55
# Fingerprint (SHA1): 40:9d:4b:d9:17:b5:5c:27:b6:9b:64:cb:98:22:44:0d:cd:09:b8:89
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Juur-SK"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001\011
\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060\011
\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125
\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164\163
\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020\060
\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001\011
\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060\011
\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125
\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164\163
\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020\060
\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\216\113\374
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\346\060\202\003\316\240\003\002\001\002\002\004\073
\216\113\374\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\135\061\030\060\026\006\011\052\206\110\206\367\015
```

\001\011\001\026\011\160\153\151\100\163\153\056\145\145\061\013
\060\011\006\003\125\004\006\023\002\105\105\061\042\060\040\006
\003\125\004\012\023\031\101\123\040\123\145\162\164\151\146\151
\164\163\145\145\162\151\155\151\163\153\145\163\153\165\163\061
\020\060\016\006\003\125\004\003\023\007\112\165\165\162\055\123
\113\060\036\027\015\060\061\060\070\063\060\061\064\062\063\060
\061\132\027\015\061\066\060\070\062\066\061\064\062\063\060\061
\132\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001
\011\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060
\011\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003
\125\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164
\163\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020
\060\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113
\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001
\000\201\161\066\076\063\007\326\343\060\215\023\176\167\062\106
\313\317\031\262\140\061\106\227\206\364\230\106\244\302\145\105
\317\323\100\174\343\132\042\250\020\170\063\314\210\261\323\201
\112\366\142\027\173\137\115\012\056\320\317\213\043\356\117\002
\116\273\353\016\312\275\030\143\350\200\034\215\341\034\215\075
\340\377\133\137\352\144\345\227\350\077\231\177\014\012\011\063
\000\032\123\247\041\341\070\113\326\203\033\255\257\144\302\371
\034\172\214\146\110\115\146\037\030\012\342\076\273\037\007\145
\223\205\271\032\260\271\304\373\015\021\366\365\326\371\033\307
\054\053\267\030\121\376\340\173\366\250\110\257\154\073\117\057
\357\370\321\107\036\046\127\360\121\035\063\226\377\357\131\075
\332\115\321\025\064\307\352\077\026\110\173\221\034\200\103\017
\075\270\005\076\321\263\225\315\330\312\017\302\103\147\333\267
\223\340\042\202\056\276\365\150\050\203\271\301\073\151\173\040
\332\116\234\155\341\272\315\217\172\154\260\011\042\327\213\013
\333\034\325\132\046\133\015\300\352\345\140\320\237\376\065\337
\077\002\003\001\000\001\243\202\001\254\060\202\001\250\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\202\001\026\006\003\125\035\040\004\202\001\015\060\202\001\011
\060\202\001\005\006\012\053\006\001\004\001\316\037\001\001\001
\060\201\366\060\201\320\006\010\053\006\001\005\005\007\002\002
\060\201\303\036\201\300\000\123\000\145\000\145\000\040\000\163
\000\145\000\162\000\164\000\151\000\146\000\151\000\153\000\141
\000\141\000\164\000\040\000\157\000\156\000\040\000\166\000\344
\000\154\000\152\000\141\000\163\000\164\000\141\000\164\000\165
\000\144\000\040\000\101\000\123\000\055\000\151\000\163\000\040
\000\123\000\145\000\162\000\164\000\151\000\146\000\151\000\164
\000\163\000\145\000\145\000\162\000\151\000\155\000\151\000\163
\000\153\000\145\000\163\000\153\000\165\000\163\000\040\000\141
\000\154\000\141\000\155\000\055\000\123\000\113\000\040\000\163
\000\145\000\162\000\164\000\151\000\146\000\151\000\153\000\141
\000\141\000\164\000\151\000\144\000\145\000\040\000\153\000\151
\000\156\000\156\000\151\000\164\000\141\000\155\000\151\000\163

\000\145\000\153\000\163\060\041\006\010\053\006\001\005\005\007
\002\001\026\025\150\164\164\160\072\057\057\167\167\167\056\163
\153\056\145\145\057\143\160\163\057\060\053\006\003\125\035\037
\004\044\060\042\060\040\240\036\240\034\206\032\150\164\164\160
\072\057\057\167\167\167\056\163\153\056\145\145\057\152\165\165
\162\057\143\162\154\057\060\035\006\003\125\035\016\004\026\004
\024\004\252\172\107\243\344\211\257\032\317\012\100\247\030\077
\157\357\351\175\276\060\037\006\003\125\035\043\004\030\060\026
\200\024\004\252\172\107\243\344\211\257\032\317\012\100\247\030
\077\157\357\351\175\276\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\346\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\001\001\000\173\301\030\224\123\242
\011\363\376\046\147\232\120\344\303\005\057\053\065\170\221\114
\174\250\021\021\171\114\111\131\254\310\367\205\145\134\106\273
\073\020\240\002\257\315\117\265\314\066\052\354\135\376\357\240
\221\311\266\223\157\174\200\124\354\307\010\160\015\216\373\202
\354\052\140\170\151\066\066\321\305\234\213\151\265\100\310\224
\145\167\362\127\041\146\073\316\205\100\266\063\143\032\277\171
\036\374\134\035\323\035\223\033\213\014\135\205\275\231\060\062
\030\011\221\122\351\174\241\272\377\144\222\232\354\376\065\356
\214\057\256\374\040\206\354\112\336\033\170\062\067\246\201\322
\235\257\132\022\026\312\231\133\374\157\155\016\305\240\036\206
\311\221\320\134\230\202\137\143\014\212\132\253\330\225\246\314
\313\212\326\277\144\113\216\312\212\262\260\351\041\062\236\252
\250\205\230\064\201\071\041\073\250\072\122\062\075\366\153\067
\206\006\132\025\230\334\360\021\146\376\064\040\267\003\364\101
\020\175\071\204\171\226\162\143\266\226\002\345\153\271\255\031
\115\273\306\104\333\066\313\052\234\216

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Juur-SK"

Issuer: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.113549.1.9.1=pki@sk.ee

Serial Number:3b:8e:4b:fc

Subject: CN=Juur-SK,O=AS Sertifitseerimiskeskus,C=EE,1.2.840.113549.1.9.1=pki@sk.ee

Not Valid Before: Thu Aug 30 14:23:01 2001

Not Valid After: Fri Aug 26 14:23:01 2016

Fingerprint (MD5): aa:8e:5d:d9:f8:db:0a:58:b7:8d:26:87:6c:82:35:55

Fingerprint (SHA1): 40:9d:4b:d9:17:b5:5c:27:b6:9b:64:cb:98:22:44:0d:cd:09:b8:89

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Juur-SK"


```

CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\100\235\113\331\027\265\134\047\266\233\144\313\230\042\104\015
\315\011\270\211
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\252\216\135\331\370\333\012\130\267\215\046\207\154\202\065\125
END
CKA_ISSUER
MULTILINE_OCTAL
\060\135\061\030\060\026\006\011\052\206\110\206\367\015\001\011
\001\026\011\160\153\151\100\163\153\056\145\145\061\013\060\011
\006\003\125\004\006\023\002\105\105\061\042\060\040\006\003\125
\004\012\023\031\101\123\040\123\145\162\164\151\146\151\164\163
\145\145\162\151\155\151\163\153\145\163\153\165\163\061\020\060
\016\006\003\125\004\003\023\007\112\165\165\162\055\123\113
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\073\216\113\374
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "ComSign CA"
# Issuer: C=IL,O=ComSign,CN=ComSign CA
# Serial Number: 14:13:96:83:14:55:8c:ea:7b:63:e5:fc:34:87:77:44
# Subject: C=IL,O=ComSign,CN=ComSign CA
#
# Not Valid Before: Wed Mar 24 11:32:18 2004
# Not Valid After: Mon Mar 19 15:02:18 2029
# Fingerprint (MD5): cd:f4:39:f3:b5:18:50:d7:3e:a4:c5:91:a0:3e:21:4b
# Fingerprint (SHA1): e1:a4:5b:14:1a:21:da:1a:79:f4:1a:42:a9:61:d6:69:cd:06:34:c1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ComSign CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\064\061\023\060\021\006\003\125\004\003\023\012\103\157\155
\123\151\147\156\040\103\101\061\020\060\016\006\003\125\004\012
\023\007\103\157\155\123\151\147\156\061\013\060\011\006\003\125
\004\006\023\002\111\114
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL

```

\060\064\061\023\060\021\006\003\125\004\003\023\012\103\157\155
\123\151\147\156\040\103\101\061\020\060\016\006\003\125\004\012
\023\007\103\157\155\123\151\147\156\061\013\060\011\006\003\125
\004\006\023\002\111\114

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\024\023\226\203\024\125\214\352\173\143\345\374\064\207
\167\104

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\003\223\060\202\002\173\240\003\002\001\002\002\020\024
\023\226\203\024\125\214\352\173\143\345\374\064\207\167\104\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\064
\061\023\060\021\006\003\125\004\003\023\012\103\157\155\123\151
\147\156\040\103\101\061\020\060\016\006\003\125\004\012\023\007
\103\157\155\123\151\147\156\061\013\060\011\006\003\125\004\006
\023\002\111\114\060\036\027\015\060\064\060\063\062\064\061\061
\063\062\061\070\132\027\015\062\071\060\063\061\071\061\065\060
\062\061\070\132\060\064\061\023\060\021\006\003\125\004\003\023
\012\103\157\155\123\151\147\156\040\103\101\061\020\060\016\006
\003\125\004\012\023\007\103\157\155\123\151\147\156\061\013\060
\011\006\003\125\004\006\023\002\111\114\060\202\001\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001
\017\000\060\202\001\012\002\202\001\001\000\360\344\124\151\053
\323\307\217\152\104\344\176\130\047\370\013\320\344\224\022\212
\361\033\070\070\057\037\061\234\006\324\054\247\336\013\052\256
\032\240\343\236\152\277\237\074\307\156\242\371\213\144\154\072
\255\205\125\121\124\245\070\125\270\253\203\004\362\077\144\066
\367\300\215\103\103\152\146\321\367\027\052\325\357\066\372\060
\020\102\327\123\315\371\372\063\163\114\263\351\204\040\212\326
\101\047\065\344\070\372\224\233\270\172\344\171\037\063\373\033
\330\041\011\050\174\115\030\151\136\144\212\172\031\223\312\176
\354\363\162\347\067\007\130\131\050\254\102\371\305\377\315\077
\347\245\372\070\261\320\014\307\331\122\032\123\326\201\314\102
\172\065\133\355\113\072\172\366\265\216\314\377\017\174\344\140
\066\207\057\255\360\241\045\175\377\322\113\021\210\160\124\246
\101\250\147\123\122\102\136\344\064\236\344\276\243\354\252\142
\135\335\303\114\246\202\101\344\063\013\254\311\063\017\144\202
\127\052\375\014\255\066\341\014\256\113\305\357\073\231\331\043
\263\133\135\264\127\354\164\160\014\052\117\002\003\001\000\001
\243\201\240\060\201\235\060\014\006\003\125\035\023\004\005\060
\003\001\001\377\060\075\006\003\125\035\037\004\066\060\064\060
\062\240\060\240\056\206\054\150\164\164\160\072\057\057\146\145
\144\151\162\056\143\157\155\163\151\147\156\056\143\157\056\151
\154\057\143\162\154\057\103\157\155\123\151\147\156\103\101\056
\143\162\154\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\206\060\037\006\003\125\035\043\004\030\060\026\200\024

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\113\001\233\076\126\032\145\066\166\313\173\227\252\222\005\356
\062\347\050\061\060\035\006\003\125\035\016\004\026\004\024\113
\001\233\076\126\032\145\066\166\313\173\227\252\222\005\356\062
\347\050\061\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\003\202\001\001\000\320\331\245\176\376\051\140\105\235
\176\203\317\156\274\107\156\365\032\236\124\166\102\161\264\074
\130\077\055\100\045\102\366\201\234\361\211\020\310\016\252\170
\117\070\011\127\260\074\300\010\374\065\216\361\110\121\215\014
\161\164\272\204\304\327\162\233\204\174\070\116\144\006\047\052
\341\247\265\354\010\231\264\012\015\324\205\163\310\022\341\065
\355\361\005\061\035\163\231\014\353\226\312\335\323\346\205\252
\360\212\373\165\301\362\011\074\145\145\144\363\114\330\255\313
\210\151\363\344\203\267\014\275\027\132\226\027\312\133\377\255
\273\034\351\055\204\200\330\041\276\205\122\331\324\164\271\151
\205\272\115\355\050\062\353\371\141\112\344\304\066\036\031\334
\157\204\021\037\225\365\203\050\030\250\063\222\103\047\335\135
\023\004\105\117\207\325\106\315\075\250\272\360\363\270\126\044
\105\353\067\307\341\166\117\162\071\030\337\176\164\162\307\163
\055\071\352\140\346\255\021\242\126\207\173\303\150\232\376\370
\214\160\250\337\145\062\364\244\100\214\241\302\104\003\016\224
\000\147\240\161\000\202\110
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code

Signing Only Certificate

Trust for "ComSign CA"

Issuer: C=IL,O=ComSign,CN=ComSign CA

Serial Number: 14:13:96:83:14:55:8c:ea:7b:63:e5:fc:34:87:77:44

Subject: C=IL,O=ComSign,CN=ComSign CA

Not Valid Before: Wed Mar 24 11:32:18 2004

Not Valid After: Mon Mar 19 15:02:18 2029

Fingerprint (MD5): cd:f4:39:f3:b5:18:50:d7:3e:a4:c5:91:a0:3e:21:4b

Fingerprint (SHA1): e1:a4:5b:14:1a:21:da:1a:79:f4:1a:42:a9:61:d6:69:cd:06:34:c1

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ComSign CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\341\244\133\024\032\041\332\032\171\364\032\102\251\141\326\151
\315\006\064\301
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\315\364\071\363\265\030\120\327\076\244\305\221\240\076\041\113
```

```
END
CKA_ISSUER MULTILINE_OCTAL
\060\064\061\023\060\021\006\003\125\004\003\023\012\103\157\155
\123\151\147\156\040\103\101\061\020\060\016\006\003\125\004\012
\023\007\103\157\155\123\151\147\156\061\013\060\011\006\003\125
\004\006\023\002\111\114
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\024\023\226\203\024\125\214\352\173\143\345\374\064\207
\167\104
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ComSign Secured CA"
# Issuer: C=IL,O=ComSign,CN=ComSign Secured CA
# Serial Number:c7:28:47:09:b3:b8:6c:45:8c:1d:fa:24:f5:36:4e:e9
# Subject: C=IL,O=ComSign,CN=ComSign Secured CA
# Not Valid Before: Wed Mar 24 11:37:20 2004
# Not Valid After: Fri Mar 16 15:04:56 2029
# Fingerprint (MD5): 40:01:25:06:8d:21:43:6a:0e:43:00:9c:e7:43:f3:d5
# Fingerprint (SHA1): f9:cd:0e:2c:da:76:24:c1:8f:bd:f0:f0:ab:b6:45:b8:f7:fe:d5:7a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL
CK_FALSE
```

```
CKA_LABEL UTF8 "ComSign Secured CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155
\123\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061
\020\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147
\156\061\013\060\011\006\003\125\004\006\023\002\111\114
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155
\123\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061
\020\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147
\156\061\013\060\011\006\003\125\004\006\023\002\111\114
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\307\050\107\011\263\270\154\105\214\035\372\044\365
```

\066\116\351

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\253\060\202\002\223\240\003\002\001\002\002\021\000
\307\050\107\011\263\270\154\105\214\035\372\044\365\066\116\351
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155\123
\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061\020
\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147\156
\061\013\060\011\006\003\125\004\006\023\002\111\114\060\036\027
\015\060\064\060\063\062\064\061\061\063\067\062\060\132\027\015
\062\071\060\063\061\066\061\065\060\064\065\066\132\060\074\061
\033\060\031\006\003\125\004\003\023\022\103\157\155\123\151\147
\156\040\123\145\143\165\162\145\144\040\103\101\061\020\060\016
\006\003\125\004\012\023\007\103\157\155\123\151\147\156\061\013
\060\011\006\003\125\004\006\023\002\111\114\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\306\265\150\137
\035\224\025\303\244\010\125\055\343\240\127\172\357\351\164\052
\273\271\174\127\111\032\021\136\117\051\207\014\110\326\152\347
\217\324\176\127\044\271\006\211\344\034\074\352\254\343\332\041
\200\163\041\012\357\171\230\154\037\010\377\241\120\175\362\230
\033\311\124\157\076\245\050\354\041\004\017\105\273\007\075\241
\300\372\052\230\035\116\006\223\373\365\210\073\253\137\313\026
\277\346\363\236\112\207\355\031\352\302\237\103\344\361\201\245
\177\020\117\076\321\112\142\255\123\033\313\203\377\007\145\245
\222\055\146\251\133\270\132\364\035\264\041\221\112\027\173\236
\062\376\126\044\071\262\124\204\103\365\204\302\330\274\101\220
\314\235\326\150\332\351\202\120\251\073\150\317\265\135\002\224
\140\026\261\103\331\103\135\335\135\207\156\352\273\263\311\153
\366\003\224\011\160\336\026\021\172\053\350\166\217\111\020\230
\167\271\143\134\213\063\227\165\366\013\214\262\253\133\336\164
\040\045\077\343\363\021\371\207\150\206\065\161\303\035\214\055
\353\345\032\254\017\163\325\202\131\100\200\323\002\003\001\000
\001\243\201\247\060\201\244\060\014\006\003\125\035\023\004\005
\060\003\001\001\377\060\104\006\003\125\035\037\004\075\060\073
\060\071\240\067\240\065\206\063\150\164\164\160\072\057\057\146
\145\144\151\162\056\143\157\155\163\151\147\156\056\143\157\056
\151\154\057\143\162\154\057\103\157\155\123\151\147\156\123\145
\143\165\162\145\144\103\101\056\143\162\154\060\016\006\003\125
\035\017\001\001\377\004\004\003\002\001\206\060\037\006\003\125
\035\043\004\030\060\026\200\024\301\113\355\160\266\367\076\174
\000\073\000\217\307\076\016\105\237\036\135\354\060\035\006\003
\125\035\016\004\026\004\024\301\113\355\160\266\367\076\174\000
\073\000\217\307\076\016\105\237\036\135\354\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\026
\317\356\222\023\120\253\173\024\236\063\266\102\040\152\324\025
\275\011\253\374\162\350\357\107\172\220\254\121\301\144\116\351

```
\210\275\103\105\201\343\146\043\077\022\206\115\031\344\005\260
\346\067\302\215\332\006\050\311\017\211\244\123\251\165\077\260
\226\373\253\114\063\125\371\170\046\106\157\033\066\230\373\102
\166\301\202\271\216\336\373\105\371\143\033\142\073\071\006\312
\167\172\250\074\011\317\154\066\075\017\012\105\113\151\026\032
\105\175\063\003\145\371\122\161\220\046\225\254\114\014\365\213
\223\077\314\165\164\205\230\272\377\142\172\115\037\211\376\256
\275\224\000\231\277\021\245\334\340\171\305\026\013\175\002\141
\035\352\205\371\002\025\117\347\132\211\116\024\157\343\067\113
\205\365\301\074\141\340\375\005\101\262\222\177\303\035\240\320
\256\122\144\140\153\030\306\046\234\330\365\144\344\066\032\142
\237\212\017\076\377\155\116\031\126\116\040\221\154\237\064\063
\072\064\127\120\072\157\201\136\006\306\365\076\174\116\216\053
\316\145\006\056\135\322\052\123\164\136\323\156\047\236\217
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ComSign Secured CA"

Issuer: C=IL,O=ComSign,CN=ComSign Secured CA

Serial Number:c7:28:47:09:b3:b8:6c:45:8c:1d:fa:24:f5:36:4e:e9

Subject: C=IL,O=ComSign,CN=ComSign

Secured CA

Not Valid Before: Wed Mar 24 11:37:20 2004

Not Valid After: Fri Mar 16 15:04:56 2029

Fingerprint (MD5): 40:01:25:06:8d:21:43:6a:0e:43:00:9c:e7:43:f3:d5

Fingerprint (SHA1): f9:cd:0e:2c:da:76:24:c1:8f:bd:f0:f0:ab:b6:45:b8:f7:fe:d5:7a

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ComSign Secured CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\371\315\016\054\332\166\044\301\217\275\360\360\253\266\105\270
\367\376\325\172
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\100\001\045\006\215\041\103\152\016\103\000\234\347\103\363\325
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\074\061\033\060\031\006\003\125\004\003\023\022\103\157\155
\123\151\147\156\040\123\145\143\165\162\145\144\040\103\101\061
\020\060\016\006\003\125\004\012\023\007\103\157\155\123\151\147
\156\061\013\060\011\006\003\125\004\006\023\002\111\114
```

END

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\307\050\107\011\263\270\154\105\214\035\372\044\365
\066\116\351
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "ComSign Advanced Security CA"
# Issuer: CN=ComSign Advanced Security CA
# Serial Number:7a:5d:e9:33:d0:04:9e:b3:4a:1a:17:74:cb:16:9b:6d
# Subject: CN=ComSign Advanced Security CA
# Not Valid Before: Wed Mar 24 21:52:04 2004
# Not Valid After: Sat Mar 24 21:55:55 2029
# Fingerprint (MD5): f0:9e:63:93:76:a5:95:bc:18:61:f1:9b:fb:d3:64:dd
# Fingerprint (SHA1): 80:bf:3d:e9:a4:1d:76:8d:19:4b:29:3c:85:63:2c:db:c8:ea:8c:f7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ComSign Advanced Security CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
```

```
MULTILINE_OCTAL
\060\047\061\045\060\043\006\003\125\004\003\023\034\103\157\155
\123\151\147\156\040\101\144\166\141\156\143\145\144\040\123\145
\143\165\162\151\164\171\040\103\101
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\047\061\045\060\043\006\003\125\004\003\023\034\103\157\155
\123\151\147\156\040\101\144\166\141\156\143\145\144\040\123\145
\143\165\162\151\164\171\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\172\135\351\063\320\004\236\263\112\032\027\164\313\026
\233\155
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\006\033\060\202\004\003\240\003\002\001\002\002\020\172
\135\351\063\320\004\236\263\112\032\027\164\313\026\233\155\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\047
\061\045\060\043\006\003\125\004\003\023\034\103\157\155\123\151
\147\156\040\101\144\166\141\156\143\145\144\040\123\145\143\165
\162\151\164\171\040\103\101\060\036\027\015\060\064\060\063\062
```

\064\062\061\065\062\060\064\132\027\015\062\071\060\063\062\064
\062\061\065\065\065\065\132\060\047\061\045\060\043\006\003\125
\004\003\023\034\103\157\155\123\151\147\156\040\101\144\166\141
\156\143\145\144\040\123\145\143\165\162\151\164\171\040\103\101
\060\202\002\040\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\015\000\060\202\002\010\002\202\002\001
\000\235\234\134\073\001\204\127\132\364\053\376\155\024\262\154
\267\355\220\327\373\127\103\240\317\140\033\131\057\115\121\140
\075\034\111\242\152\101\143\253\270\355\146\276\100\106\215\252
\222\133\075\056\053\301\141\230\124\154\274\114\253\151\372\215
\105\105\201\052\032\155\370\263\370\017\143\313\216\174\355\124
\051\243\024\030\374\341\311\261\330\124\272\234\312\052\033\320
\254\302\211\030\026\112\376\112\004\322\322\233\265\207\206\301
\311\173\037\066\026\105\271\360\272\206\302\167\212\063\061\102
\242\316\014\162\075\022\345\221\070\364\047\147\141\114\314\342
\365\115\054\022\360\315\263\204\301\011\165\237\000\117\370\167
\323\363\062\157\201\217\027\176\073\233\153\363\036\347\372\223
\117\014\056\227\335\160\130\023\175\363\221\203\215\242\075\061
\332\143\343\071\166\166\063\346\324\146\015\224\216\025\224\234
\070\173\334\161\037\332\265\340\327\227\132\202\164\336\073\006
\332\357\305\053\361\150\335\047\123\370\271\354\214\017\123\042
\344\071\202\344\371\256\141\374\030\050\176\307\151\351\150\364
\176\340\321\274\340\155\310\326\321\253\104\061\141\264\354\170
\065\054\106\336\350\363\266\074\230\263\251\034\007\112\230\315
\107\046\202\360\324\221\357\020\223\347\150\346\122\152\227\176
\271\040\227\027\372\031\062\224\043\236\307\163\262\110\350\230
\265\367\165\126\240\113\235\167\250\032\051\164\070\130\340\310
\315\261\063\033\057\376\230\223\170\005\001\164\253\256\102\305
\033\035\057\174\101\174\245\323\140\252\120\301\363\310\210\101
\130\366\265\222\030\375\256\146\216\234\347\073\232\321\267\333
\332\307\114\313\042\033\112\077\140\337\071\366\332\352\256\314
\207\225\270\122\233\132\235\121\105\014\166\357\051\101\245\012
\271\370\136\304\275\054\114\064\110\107\325\213\310\314\317\321
\073\130\345\172\306\375\041\354\167\051\257\363\132\124\016\251
\244\144\174\367\134\321\241\023\345\073\324\133\113\000\224\311
\313\015\335\004\117\333\150\262\267\147\043\366\141\245\254\017
\071\076\232\303\057\251\144\303\022\205\232\244\242\122\324\171
\374\272\043\253\011\032\355\075\231\235\331\347\050\370\017\120
\117\002\001\003\243\202\001\103\060\202\001\077\060\013\006\003
\125\035\017\004\004\003\002\001\206\060\017\006\003\125\035\023
\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035
\016\004\026\004\024\351\372\047\345\355\113\041\160\144\326\161
\252\174\345\202\034\060\322\015\172\060\115\006\003\125\035\037
\004\106\060\104\060\102\240\100\240\076\206\074\150\164\164\160
\072\057\057\146\145\144\151\162\056\143\157\155\163\151\147\156
\056\143\157\056\151\154\057\143\162\154\057\103\157\155\123\151
\147\156\101\144\166\141\156\143\145\144\123\145\143\165\162\151
\164\171\103\101\056\143\162\154\060\020\006\011\053\006\001\004

\001\202\067\025\001\004\003\002\001\000\060\102\006\003\125\035
\040\004\073\060\071\060\067\006\011\052\003\004\005\006\007\010
\011\012\060\052\060\050\006\010\053\006\001\005\005\007\002\001
\026\034\150\164\164\160\072\057\057\167\167\167\056\143\157\155
\163\151\147\156\056\143\157\056\151\154\057\143\160\163\060\133
\006\010\053\006\001\005\005\007\001\001\004\117\060\115\060\113
\006\010\053\006\001\005\005\007\060\002\206\077\150\164\164\160
\072\057\057\146\145\144\151\162\056\143\157\155\163\151\147\156
\056\143\157\056\151\154\057\143\141\143\145\162\164\057\103\157
\155\123\151\147\156\101\144\166\141\156\143\145\144\123\145\143
\165\162\151\164\171\103\101\056\143\162\164\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000\234
\215\135\232\006\021\241\156\026\030\117\313\262\002\073\222\217
\035\046\245\313\353\110\356\125\035\252\020\340\151\116\301\376
\062\000\336\017\316\015\264\143\274\340\142\032\340\367\365\251
\345\311\124\024\213\100\370\255\363\155\002\354\216\173\334\245
\171\222\001\265\377\241\131\143\071\021\265\276\122\256\164\332
\331\041\243\022\330\307\225\370\333\157\126\125\277\225\022\275
\062\043\307\311\154\145\001\357\373\164\216\273\044\206\117\175
\335\360\132\217\073\204\214\171\165\051\364\206\266\323\301\014
\131\025\302\003\127\253\075\110\327\054\105\224\100\334\340\251
\113\137\314\020\327\226\277\251\234\003\052\144\362\274\176\370
\245\247\231\221\047\005\376\111\247\330\255\012\206\066\074\016
\075\246\341\174\152\201\021\173\105\273\150\215\065\061\375\046
\123\101\076\074\156\153\036\330\253\055\211\201\231\306\037\227
\363\132\365\037\141\275\376\025\131\223\012\336\372\121\372\106
\337\106\364\374\142\154\130\243\014\336\311\031\036\300\034\133
\070\073\101\217\005\061\016\256\355\054\135\267\017\334\071\304
\137\042\263\245\262\130\060\044\277\371\011\255\360\226\033\067
\157\100\146\376\267\052\211\325\306\343\176\003\130\260\175\070
\346\212\253\077\365\201\363\012\101\167\002\163\355\247\124\335
\007\061\134\266\265\166\222\164\167\271\157\246\011\272\016\335
\014\347\166\304\113\276\313\073\325\105\300\211\343\053\167\172
\142\230\303\133\374\175\127\136\216\356\335\033\120\041\155\221
\277\031\134\217\227\171\052\301\213\141\157\252\136\122\365\351
\117\064\230\060\275\034\007\303\267\304\174\201\331\243\103\062
\146\306\055\274\071\133\251\135\211\353\004\053\104\225\107\371
\122\364\117\005\356\243\052\143\021\015\036\272\304\370\112\133
\120\100\121\167\056\364\344\337\361\003\024\346\171\151\332\130
\104\202\130\024\203\221\064\003\327\172\155\152\321\062\042\051
\221\033\032\344\013\275\062\025\047\040\277\032\157\122\202\323
\371\057\111\017\220\154\001\200\111\256\030\356\062\054\316\021
\307\376\240\004\230\150\224\360\374\213\305\054\157\207\375\331
\302\304\034\351\055\314\016\254\237\365\361\374\222\070\215

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER
CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Trust for "ComSign Advanced Security CA"
Issuer: CN=ComSign Advanced Security CA
Serial Number:7a:5d:e9:33:d0:04:9e:b3:4a:1a:17:74:cb:16:9b:6d
Subject: CN=ComSign Advanced Security CA
Not Valid Before: Wed Mar 24 21:52:04 2004
Not Valid After: Sat Mar 24 21:55:55 2029
Fingerprint (MD5): f0:9e:63:93:76:a5:95:bc:18:61:f1:9b:fb:d3:64:dd
Fingerprint (SHA1): 80:bf:3d:e9:a4:1d:76:8d:19:4b:29:3c:85:63:2c:db:c8:ea:8c:f7

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ComSign Advanced Security CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\200\277\075\351\244\035\166\215\031\113\051\074\205\143\054\333
\310\352\214\367
END

CKA_CERT_MD5_HASH MULTILINE_OCTAL
\360\236\143\223\166\245\225\274\030\141\361\233\373\323\144\335
END

CKA_ISSUER MULTILINE_OCTAL
\060\047\061\045\060\043\006\003\125\004\003\023\034\103\157\155
\123\151\147\156\040\101\144\166\141\156\143\145\144\040\123\145
\143\165\162\151\164\171\040\103\101
END

CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\172\135\351\063\320\004\236\263\112\032\027\164\313\026
\233\155
END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "Global Chambersign Root"
Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
Serial Number: 0 (0x0)
Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
Not Valid Before: Tue Sep 30 16:14:18 2003
Not Valid After: Wed Sep 30 16:14:18 2037

```
# Fingerprint (MD5): c5:e6:7b:bf:06:d0:4f:43:ed:c4:7a:65:8a:fb:6b:19
# Fingerprint (SHA1): 33:9b:6b:14:50:24:9b:55:7a:01:87:72:84:d9:e0:2f:c3:d2:d8:e9
CKA_CLASS
  CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Global Chambersign Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\001\000
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\305\060\202\003\255\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047
\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145
\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070
\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013
\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141
\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060\036
\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103\150
\141\155\142\145\162\163\151\147\156\040\122\157\157\164\060\036
\027\015\060\063\060\071\063\060\061\066\061\064\061\070\132\027
\015\063\067\060\071\063\060\061\066\061\064\061\070\132\060\175
\061\013\060\011\006\003\125\004\006\023\002\105\125\061\047\060
```

\045\006\003\125\004\012\023\036\101\103\040\103\141\155\145\162
\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070\062
\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013\023
\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141\155
\142\145\162\163\151\147\156\056\157\162\147\061\040\060\036\006
\003\125\004\003\023\027\107\154\157\142\141\154\040\103\150\141
\155\142\145\162\163\151\147\156\040\122\157\157\164\060\202\001
\040\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\015\000\060\202\001\010\002\202\001\001\000\242\160
\242\320\237\102\256\133\027\307\330\175\317\024\203\374\117\311
\241\267\023\257\212\327\236\076\004\012\222\213\140\126\372\264
\062\057\210\115\241\140\010\364\267\011\116\240\111\057\111\326
\323\337\235\227\132\237\224\004\160\354\077\131\331\267\314\146
\213\230\122\050\011\002\337\305\057\204\215\172\227\167\277\354
\100\235\045\162\253\265\077\062\230\373\267\267\374\162\204\345
\065\207\371\125\372\243\037\016\157\056\050\335\151\240\331\102
\020\306\370\265\104\302\320\103\177\333\274\344\242\074\152\125
\170\012\167\251\330\352\031\062\267\057\376\134\077\033\356\261
\230\354\312\255\172\151\105\343\226\017\125\366\346\355\165\352
\145\350\062\126\223\106\211\250\045\212\145\006\356\153\277\171
\007\320\361\267\257\355\054\115\222\273\300\250\137\247\147\175
\004\362\025\010\160\254\222\326\175\004\322\063\373\114\266\013
\013\373\032\311\304\215\003\251\176\134\362\120\253\022\245\241
\317\110\120\245\357\322\310\032\023\372\260\177\261\202\034\167
\152\017\137\334\013\225\217\357\103\176\346\105\011\045\002\001
\003\243\202\001\120\060\202\001\114\060\022\006\003\125\035\023
\001\001\377\004\010\060\006\001\001\377\002\001\014\060\077\006
\003\125\035\037\004\070\060\066\060\064\240\062\240\060\206\056
\150\164\164\160\072\057\057\143\162\154\056\143\150\141\155\142
\145\162\163\151\147\156\056\157\162\147\057\143\150\141\155\142
\145\162\163\151\147\156\162\157\157\164\056\143\162\154\060\035
\006\003\125\035\016\004\026\004\024\103\234\066\237\260\236\060
\115\306\316\137\255\020\253\345\003\245\372\251\024\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\006\060\021\006
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007
\060\052\006\003\125\035\021\004\043\060\041\201\037\143\150\141
\155\142\145\162\163\151\147\156\162\157\157\164\100\143\150\141
\155\142\145\162\163\151\147\156\056\157\162\147\060\052\006\003
\125\035\022\004\043\060\041\201\037\143\150\141\155\142\145\162
\163\151\147\156\162\157\157\164\100\143\150\141\155\142\145\162
\163\151\147\156\056\157\162\147\060\133\006\003\125\035\040\004
\124\060\122\060\120\006\013\053\006\001\004\001\201\207\056\012
\001\001\060\101\060\077\006\010\053\006\001\005\005\007\002\001
\026\063\150\164\164\160\072\057\057\143\160\163\056\143\150\141
\155\142\145\162\163\151\147\156\056\157\162\147\057\143\160\163
\057\143\150\141\155\142\145\162\163\151\147\156\162\157\157\164
\056\150\164\155\154\060\015\006\011\052\206\110\206\367\015\001
\001\005\005\000\003\202\001\001\000\074\073\160\221\371\004\124

```
\047\221\341\355\355\376\150\177\141\135\345\101\145\117\062\361
\030\005\224\152\034\336\037\160\333\076\173\062\002\064\265\014
\154\241\212\174\245\364\217\377\324\330\255\027\325\055\004\321
\077\130\200\342\201\131\210\276\300\343\106\223\044\376\220\275
\046\242\060\055\350\227\046\127\065\211\164\226\030\366\025\342
\257\044\031\126\002\002\262\272\017\024\352\306\212\146\301\206
\105\125\213\276\222\276\234\244\004\307\111\074\236\350\051\172
\211\327\376\257\377\150\365\245\027\220\275\254\231\314\245\206
\127\011\147\106\333\326\026\302\106\361\344\251\120\365\217\321
\222\025\323\137\076\306\000\111\072\156\130\262\321\321\047\015
\045\310\062\370\040\021\315\175\062\063\110\224\124\114\335\334
\171\304\060\237\353\216\270\125\265\327\210\134\305\152\044\075
\262\323\005\003\121\306\007\357\314\024\162\164\075\156\162\316
\030\050\214\112\240\167\345\011\053\105\104\107\254\267\147\177
\001\212\005\132\223\276\241\301\377\370\347\016\147\244\107\111
\166\135\165\220\032\365\046\217\360
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Global Chambersign Root"

Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

Serial Number: 0 (0x0)

Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU

Not Valid Before: Tue Sep 30 16:14:18 2003

Not Valid After: Wed Sep 30 16:14:18 2037

Fingerprint (MD5): c5:e6:7b:bf:06:d0:4f:43:ed:c4:7a:65:8a:fb:6b:19

#

Fingerprint (SHA1): 33:9b:6b:14:50:24:9b:55:7a:01:87:72:84:d9:e0:2f:c3:d2:d8:e9

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Global Chambersign Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\063\233\153\024\120\044\233\125\172\001\207\162\204\331\340\057
\303\322\330\351
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\305\346\173\277\006\320\117\103\355\304\172\145\212\373\153\031
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
```

```
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
END
```

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\001\000
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "GeoTrust Global CA"

Issuer: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US

Serial Number: 144470 (0x23456)

Subject: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US

Not Valid Before: Tue May 21 04:00:00 2002

Not Valid After: Sat May 21 04:00:00 2022

Fingerprint (MD5): f7:75:ab:29:fb:51:4e:b7:77:5e:ff:05:3c:99:8e:f5

Fingerprint (SHA1): de:28:f4:a4:ff:e5:b9:2f:a3:c5:03:d1:a3:49:a7:f9:96:2a:82:12

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GeoTrust Global CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT

MULTILINE_OCTAL

```
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\003\002\064\126

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\124\060\202\002\074\240\003\002\001\002\002\003\002
\064\126\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162
\165\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004
\003\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142
\141\154\040\103\101\060\036\027\015\060\062\060\065\062\061\060
\064\060\060\060\060\132\027\015\062\062\060\065\062\061\060\064
\060\060\060\060\132\060\102\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015\107
\145\157\124\162\165\163\164\040\111\156\143\056\061\033\060\031
\006\003\125\004\003\023\022\107\145\157\124\162\165\163\164\040
\107\154\157\142\141\154\040\103\101\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\332\314\030\143\060\375
\364\027\043\032\126\176\133\337\074\154\070\344\161\267\170\221
\324\274\241\330\114\370\250\103\266\003\351\115\041\007\010\210
\332\130\057\146\071\051\275\005\170\213\235\070\350\005\267\152
\176\161\244\346\304\140\246\260\357\200\344\211\050\017\236\045
\326\355\203\363\255\246\221\307\230\311\102\030\065\024\235\255
\230\106\222\056\117\312\361\207\103\301\026\225\127\055\120\357
\211\055\200\172\127\255\362\356\137\153\322\000\215\271\024\370
\024\025\065\331\300\106\243\173\162\310\221\277\311\125\053\315
\320\227\076\234\046\144\314\337\316\203\031\161\312\116\346\324
\325\173\251\031\315\125\336\310\354\322\136\070\123\345\134\117
\214\055\376\120\043\066\374\146\346\313\216\244\071\031\000\267
\225\002\071\221\013\016\376\070\056\321\035\005\232\366\115\076
\157\017\007\035\257\054\036\217\140\071\342\372\066\123\023\071
\324\136\046\053\333\075\250\024\275\062\353\030\003\050\122\004
\161\345\253\063\075\341\070\273\007\066\204\142\234\171\352\026
\060\364\137\300\053\350\161\153\344\371\002\003\001\000\001\243
\123\060\121\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\300
\172\230\150\215\211\373\253\005\144\014\021\175\252\175\145\270
\312\314\116\060\037\006\003\125\035\043\004\030\060\026\200\024
\300\172\230\150\215\211\373\253\005\144\014\021\175\252\175\145
\270\312\314\116\060\015\006\011\052\206\110\206\367\015\001\001
\005\005\000\003\202\001\001\000\065\343\051\152\345\057\135\124
\216\051\120\224\237\231\032\024\344\217\170\052\142\224\242\047
\147\236\320\317\032\136\107\351\301\262\244\317\335\101\032\005
\116\233\113\356\112\157\125\122\263\044\241\067\012\353\144\166
\052\056\054\363\375\073\165\220\277\372\161\330\307\075\067\322
\265\005\225\142\271\246\336\211\075\066\173\070\167\110\227\254
\246\040\217\056\246\311\014\302\262\231\105\000\307\316\021\121

```
\042\042\340\245\352\266\025\110\011\144\352\136\117\164\367\005
\076\307\212\122\014\333\025\264\275\155\233\345\306\261\124\150
\251\343\151\220\266\232\245\017\270\271\077\040\175\256\112\265
\270\234\344\035\266\253\346\224\245\301\307\203\255\333\365\047
\207\016\004\154\325\377\335\240\135\355\207\122\267\053\025\002
\256\071\246\152\164\351\332\304\347\274\115\064\036\251\134\115
\063\137\222\011\057\210\146\135\167\227\307\035\166\023\251\325
\345\361\026\011\021\065\325\254\333\044\161\160\054\230\126\013
\331\027\264\321\343\121\053\136\165\350\325\320\334\117\064\355
\302\005\146\200\241\313\346\063
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "GeoTrust Global CA"

Issuer: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US

Serial Number: 144470 (0x23456)

Subject: CN=GeoTrust Global CA,O=GeoTrust Inc.,C=US

Not Valid Before: Tue May 21 04:00:00 2002

Not Valid After: Sat May 21 04:00:00 2022

Fingerprint (MD5): f7:75:ab:29:fb:51:4e:b7:77:5e:ff:05:3c:99:8e:f5

Fingerprint (SHA1): de:28:f4:a4:ff:e5:b9:2f:a3:c5:03:d1:a3:49:a7:f9:96:2a:82:12

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GeoTrust Global CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\336\050\364\244\377\345\271\057\243\305\003\321\243\111\247\371
\226\052\202\022
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\367\165\253\051\373\121\116\267\167\136\377\005\074\231\216\365
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\102\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\033\060\031\006\003\125\004\003
\023\022\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\003\002\064\126
```

END


```
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Global CA 2"
# Issuer: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
# Serial Number: 1 (0x1)
# Subject: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
# Not Valid
  Before: Thu Mar 04 05:00:00 2004
# Not Valid After: Mon Mar 04 05:00:00 2019
# Fingerprint (MD5): 0e:40:a7:6c:de:03:5d:8f:d1:0f:e4:d1:8d:f9:6c:a9
# Fingerprint (SHA1): a9:e9:78:08:14:37:58:88:f2:05:19:b0:6d:2b:0d:2b:60:16:90:7d
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101\040\062
END
```

```
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101\040\062
END
```

```
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
```

```
CKA_VALUE MULTILINE_OCTAL
\060\202\003\146\060\202\002\116\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003\023
\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141\154
\040\103\101\040\062\060\036\027\015\060\064\060\063\060\064\060
```

\065\060\060\060\060\060\132\027\015\061\071\060\063\060\064\060\065
\060\060\060\060\060\132\060\104\061\013\060\011\006\003\125\004\006
\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015\107
\145\157\124\162\165\163\164\040\111\156\143\056\061\035\060\033
\006\003\125\004\003\023\024\107\145\157\124\162\165\163\164\040
\107\154\157\142\141\154\040\103\101\040\062\060\202\001\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\001\017\000\060\202\001\012\002\202\001\001\000\357\074\115\100
\075\020\337\073\123\000\341\147\376\224\140\025\076\205\210\361
\211\015\220\310\050\043\231\005\350\053\040\235\306\363\140\106
\330\301\262\325\214\061\331\334\040\171\044\201\277\065\062\374
\143\151\333\261\052\153\356\041\130\362\010\351\170\313\157\313
\374\026\122\310\221\304\377\075\163\336\261\076\247\302\175\146
\301\365\176\122\044\032\342\325\147\221\320\202\020\327\170\113
\117\053\102\071\275\144\055\100\240\260\020\323\070\110\106\210
\241\014\273\072\063\052\142\230\373\000\235\023\131\177\157\073
\162\252\356\246\017\206\371\005\141\352\147\177\014\067\226\213
\346\151\026\107\021\302\047\131\003\263\246\140\302\041\100\126
\372\240\307\175\072\023\343\354\127\307\263\326\256\235\211\200
\367\001\347\054\366\226\053\023\015\171\054\331\300\344\206\173
\113\214\014\162\202\212\373\027\315\000\154\072\023\074\260\204
\207\113\026\172\051\262\117\333\035\324\013\363\146\067\275\330
\366\127\273\136\044\172\270\074\213\271\372\222\032\032\204\236
\330\164\217\252\033\177\136\364\376\105\042\041\002\003\001\000
\001\243\143\060\141\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\161\070\066\362\002\061\123\107\053\156\272\145\106\251\020
\025\130\040\005\011\060\037\006\003\125\035\043\004\030\060\026
\200\024\161\070\066\362\002\061\123\107\053\156\272\145\106\251
\020\025\130\040\005\011\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\001\001\000\003\367\265\053\253\135
\020\374\173\262\262\136\254\233\016\176\123\170\131\076\102\004
\376\165\243\255\254\201\116\327\002\213\136\304\055\310\122\166
\307\054\037\374\201\062\230\321\113\306\222\223\063\065\061\057
\374\330\035\104\335\340\201\177\235\351\213\341\144\221\142\013
\071\010\214\254\164\235\131\331\172\131\122\227\021\271\026\173
\157\105\323\226\331\061\175\002\066\017\234\073\156\317\054\015
\003\106\105\353\240\364\177\110\104\306\010\100\314\336\033\160
\265\051\255\272\213\073\064\145\165\033\161\041\035\054\024\012
\260\226\225\270\326\352\362\145\373\051\272\117\352\221\223\164
\151\266\362\377\341\032\320\014\321\166\205\313\212\045\275\227
\136\054\157\025\231\046\347\266\051\377\042\354\311\002\307\126
\000\315\111\271\263\154\173\123\004\032\342\250\311\252\022\005
\043\302\316\347\273\004\002\314\300\107\242\344\304\051\057\133
\105\127\211\121\356\074\353\122\010\377\007\065\036\237\065\152
\107\112\126\230\321\132\205\037\214\365\042\277\253\316\203\363
\342\042\051\256\175\203\100\250\272\154

```

END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "GeoTrust Global CA 2"
# Issuer: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
#
Serial Number: 1 (0x1)
# Subject: CN=GeoTrust Global CA 2,O=GeoTrust Inc.,C=US
# Not Valid Before: Thu Mar 04 05:00:00 2004
# Not Valid After: Mon Mar 04 05:00:00 2019
# Fingerprint (MD5): 0e:40:a7:6c:de:03:5d:8f:d1:0f:e4:d1:8d:f9:6c:a9
# Fingerprint (SHA1): a9:e9:78:08:14:37:58:88:f2:05:19:b0:6d:2b:0d:2b:60:16:90:7d
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Global CA 2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\251\351\170\010\024\067\130\210\362\005\031\260\155\053\015\053
\140\026\220\175
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\016\100\247\154\336\003\135\217\321\017\344\321\215\371\154\251
END
CKA_ISSUER MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\035\060\033\006\003\125\004\003
\023\024\107\145\157\124\162\165\163\164\040\107\154\157\142\141
\154\040\103\101\040\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "GeoTrust Universal CA"
# Issuer: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US
# Serial Number: 1 (0x1)

```

```
# Subject: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US
# Not Valid Before: Thu Mar 04 05:00:00 2004
# Not Valid After: Sun Mar 04 05:00:00 2029
# Fingerprint (MD5): 92:65:58:8b:a2:1a:31:72:73:68:5c:b4:a5:7a:07:48
# Fingerprint (SHA1): e6:21:f3:35:43:79:05:9a:4b:68:30:9d:8a:2f:74:22:15:87:ec:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GeoTrust Universal CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\150\060\202\003\120\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003\023
\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145\162
\163\141\154\040\103\101\060\036\027\015\060\064\060\063\060\064
\060\065\060\060\060\060\132\027\015\062\071\060\063\060\064\060
\065\060\060\060\060\132\060\105\061\013\060\011\006\003\125\004
\006\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015
\107\145\157\124\162\165\163\164\040\111\156\143\056\061\036\060
\034\006\003\125\004\003\023\025\107\145\157\124\162\165\163\164
\040\125\156\151\166\145\162\163\141\154\040\103\101\060\202\002
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\002\017\000\060\202\002\012\002\202\002\001\000\246\025
\125\240\243\306\340\037\214\235\041\120\327\301\276\053\133\265
\244\236\241\331\162\130\275\000\033\114\277\141\311\024\035\105
```

\202\253\306\035\200\326\075\353\020\234\072\257\155\044\370\274
\161\001\236\006\365\174\137\036\301\016\125\312\203\232\131\060
\256\031\313\060\110\225\355\042\067\215\364\112\232\162\146\076
\255\225\300\340\026\000\340\020\037\053\061\016\327\224\124\323
\102\063\240\064\035\036\105\166\335\117\312\030\067\354\205\025
\172\031\010\374\325\307\234\360\362\251\056\020\251\222\346\075
\130\075\251\026\150\074\057\165\041\030\177\050\167\245\341\141
\027\267\246\351\370\036\231\333\163\156\364\012\242\041\154\356
\332\252\205\222\146\257\366\172\153\202\332\272\042\010\065\017
\317\102\361\065\372\152\356\176\053\045\314\072\021\344\155\257
\163\262\166\035\255\320\262\170\147\032\244\071\034\121\013\147
\126\203\375\070\135\015\316\335\360\273\053\226\037\336\173\062
\122\375\035\273\265\006\241\262\041\136\245\326\225\150\177\360
\231\236\334\105\010\076\347\322\011\015\065\224\335\200\116\123
\227\327\265\011\104\040\144\026\027\003\002\114\123\015\150\336
\325\252\162\115\223\155\202\016\333\234\275\317\264\363\134\135
\124\172\151\011\226\326\333\021\301\215\165\250\264\317\071\310
\316\074\274\044\174\346\142\312\341\275\175\247\275\127\145\013
\344\376\045\355\266\151\020\334\050\032\106\275\001\035\320\227
\265\341\230\073\300\067\144\326\075\224\356\013\341\365\050\256
\013\126\277\161\213\043\051\101\216\206\305\113\122\173\330\161
\253\037\212\025\246\073\203\132\327\130\001\121\306\114\101\331
\177\330\101\147\162\242\050\337\140\203\251\236\310\173\374\123
\163\162\131\365\223\172\027\166\016\316\367\345\134\331\013\125
\064\242\252\133\265\152\124\347\023\312\127\354\227\155\364\136
\006\057\105\213\130\324\043\026\222\344\026\156\050\143\131\060
\337\120\001\234\143\211\032\237\333\027\224\202\160\067\303\044
\236\232\107\326\132\312\116\250\151\211\162\037\221\154\333\176
\236\033\255\307\037\163\335\054\117\031\145\375\177\223\100\020
\056\322\360\355\074\236\056\050\076\151\046\063\305\173\002\003
\001\000\001\243\143\060\141\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\332\273\056\252\260\014\270\210\046\121\164\134\155
\003\323\300\330\217\172\326\060\037\006\003\125\035\043\004\030
\060\026\200\024\332\273\056\252\260\014\270\210\046\121\164\134
\155\003\323\300\330\217\172\326\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206
\367\015\001\001\005\005\000\003\202\002\001\000\061\170\346\307
\265\337\270\224\100\311\161\304\250\065\354\106\035\302\205\363
\050\130\206\260\013\374\216\262\071\217\104\125\253\144\204\134
\151\251\320\232\070\074\372\345\037\065\345\104\343\200\171\224
\150\244\273\304\237\075\341\064\315\060\106\213\124\053\225\245
\357\367\077\231\204\375\065\346\317\061\306\334\152\277\247\327
\043\010\341\230\136\303\132\010\166\251\246\257\167\057\267\140
\275\104\106\152\357\227\377\163\225\301\216\350\223\373\375\061
\267\354\127\021\021\105\233\060\361\032\210\071\301\117\074\247
\000\325\307\374\253\155\200\042\160\245\014\340\135\004\051\002
\373\313\240\221\321\174\326\303\176\120\325\235\130\276\101\070

```
\353\271\165\074\025\331\233\311\112\203\131\300\332\123\375\063
\273\066\030\233\205\017\025\335\356\055\254\166\223\271\331\001
\215\110\020\250\373\365\070\206\361\333\012\306\275\204\243\043
\101\336\326\167\157\205\324\205\034\120\340\256\121\212\272\215
\076\166\342\271\312\047\362\137\237\357\156\131\015\006\330\053
\027\244\322\174\153\273\137\024\032\110\217\032\114\347\263\107
\034\216\114\105\053\040\356\110\337\347\335\011\216\030\250\332
\100\215\222\046\021\123\141\163\135\353\275\347\304\115\051\067
\141\353\254\071\055\147\056\026\326\365\000\203\205\241\314\177
\166\304\175\344\267\113\146\357\003\105\140\151\266\014\122\226
\222\204\136\246\243\265\244\076\053\331\314\330\033\107\252\362
\104\332\117\371\003\350\360\024\313\077\363\203\336\320\301\124
\343\267\350\012\067\115\213\040\131\003\060\031\241\054\310\275
\021\037\337\256\311\112\305\363\047\146\146\206\254\150\221\377
\331\346\123\034\017\213\134\151\145\012\046\310\036\064\303\135
\121\173\327\251\234\006\241\066\335\325\211\224\274\331\344\055
\014\136\011\154\010\227\174\243\075\174\223\377\077\241\024\247
\317\265\135\353\333\333\034\304\166\337\210\271\275\105\005\225
\033\256\374\106\152\114\257\110\343\316\256\017\322\176\353\346
\154\234\117\201\152\172\144\254\273\076\325\347\313\166\056\305
\247\110\301\134\220\017\313\310\077\372\346\062\341\215\033\157
\244\346\216\330\371\051\110\212\316\163\376\054
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "GeoTrust Universal CA"

Issuer: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US

Serial Number: 1 (0x1)

Subject: CN=GeoTrust Universal CA,O=GeoTrust Inc.,C=US

Not Valid Before: Thu Mar 04 05:00:00 2004

Not Valid After: Sun Mar 04 05:00:00 2029

Fingerprint (MD5): 92:65:58:8b:a2:1a:31:72:73:68:5c:b4:a5:7a:07:48

Fingerprint (SHA1): e6:21:f3:35:43:79:05:9a:4b:68:30:9d:8a:2f:74:22:15:87:ec:79

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN

CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GeoTrust Universal CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\346\041\363\065\103\171\005\232\113\150\060\235\212\057\164\042
\025\207\354\171
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\222\145\130\213\242\032\061\162\163\150\134\264\245\172\007\110

END

CKA_ISSUER MULTILINE_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\036\060\034\006\003\125\004\003
\023\025\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\001

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate

"GeoTrust Universal CA 2"

Issuer: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US

Serial Number: 1 (0x1)

Subject: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US

Not Valid Before: Thu Mar 04 05:00:00 2004

Not Valid After: Sun Mar 04 05:00:00 2029

Fingerprint (MD5): 34:fc:b8:d0:36:db:9e:14:b3:c2:f2:db:8f:e4:94:c7

Fingerprint (SHA1): 37:9a:19:7b:41:85:45:35:0c:a6:03:69:f3:3c:2e:af:47:4f:20:79

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GeoTrust Universal CA 2"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\154\060\202\003\124\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061\026
\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165\163
\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003\023
\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145\162
\163\141\154\040\103\101\040\062\060\036\027\015\060\064\060\063
\060\064\060\065\060\060\060\060\132\027\015\062\071\060\063\060
\064\060\065\060\060\060\060\132\060\107\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004\012
\023\015\107\145\157\124\162\165\163\164\040\111\156\143\056\061
\040\060\036\006\003\125\004\003\023\027\107\145\157\124\162\165
\163\164\040\125\156\151\166\145\162\163\141\154\040\103\101\040
\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002
\001\000\263\124\122\301\311\076\362\331\334\261\123\032\131\051
\347\261\303\105\050\345\327\321\355\305\305\113\241\252\164\173
\127\257\112\046\374\330\365\136\247\156\031\333\164\014\117\065
\133\062\013\001\343\333\353\172\167\065\352\252\132\340\326\350
\241\127\224\360\220\243\164\126\224\104\060\003\036\134\116\053
\205\046\164\202\172\014\166\240\157\115\316\101\055\240\025\006
\024\137\267\102\315\173\217\130\141\064\334\052\010\371\056\303
\001\246\042\104\034\114\007\202\346\133\316\320\112\174\004\323
\031\163\047\360\252\230\177\056\257\116\353\207\036\044\167\152
\135\266\350\133\105\272\334\303\241\005\157\126\216\217\020\046
\245\111\303\056\327\101\207\042\340\117\206\312\140\265\352\241
\143\300\001\227\020\171\275\000\074\022\155\053\025\261\254\113
\261\356\030\271\116\226\334\334\166\377\073\276\317\137\003\300
\374\073\350\276\106\033\377\332\100\302\122\367\376\343\072\367
\152\167\065\320\332\215\353\136\030\152\061\307\036\272\074\033
\050\326\153\124\306\252\133\327\242\054\033\031\314\242\002\366
\233\131\275\067\153\206\265\155\202\272\330\352\311\126\274\251
\066\130\375\076\031\363\355\014\046\251\223\070\370\117\301\135
\042\006\320\227\352\341\255\306\125\340\201\053\050\203\072\372
\364\173\041\121\000\276\122\070\316\315\146\171\250\364\201\126
\342\320\203\011\107\121\133\120\152\317\333\110\032\135\076\367
\313\366\145\367\154\361\225\370\002\073\062\126\202\071\172\133
\275\057\211\033\277\241\264\350\377\177\215\214\337\003\361\140
\116\130\021\114\353\243\077\020\053\203\232\001\163\331\224\155
\204\000\047\146\254\360\160\100\011\102\222\255\117\223\015\141
\011\121\044\330\222\325\013\224\141\262\207\262\355\377\232\065
\377\205\124\312\355\104\103\254\033\074\026\153\110\112\012\034
\100\210\037\222\302\013\000\005\377\362\310\002\112\244\252\251

\314\231\226\234\057\130\340\175\341\276\273\007\334\137\004\162
\134\061\064\303\354\137\055\340\075\144\220\042\346\321\354\270
\056\335\131\256\331\241\067\277\124\065\334\163\062\117\214\004
\036\063\262\311\106\361\330\134\310\125\120\311\150\275\250\272
\066\011\002\003\001\000\001\243\143\060\141\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\166\363\125\341\372\244\066\373\360
\237\134\142\161\355\074\364\107\070\020\053\060\037\006\003\125
\035\043\004\030\060\026\200\024\166\363\125\341\372\244\066\373
\360\237\134\142\161\355\074\364\107\070\020\053\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\206\060\015\006\011
\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001\000
\146\301\306\043\363\331\340\056\156\137\350\317\256\260\260\045
\115\053\370\073\130\233\100\044\067\132\313\253\026\111\377\263
\165\171\063\241\057\155\160\027\064\221\376\147\176\217\354\233
\345\136\202\251\125\037\057\334\324\121\007\022\376\254\026\076
\054\065\306\143\374\334\020\353\015\243\252\320\174\314\321\320
\057\121\056\304\024\132\336\350\031\341\076\306\314\244\051\347
\056\204\252\006\060\170\166\124\163\050\230\131\070\340\000\015
\142\323\102\175\041\237\256\075\072\214\325\372\167\015\030\053
\026\016\137\066\341\374\052\265\060\044\317\340\143\014\173\130
\032\376\231\272\102\022\261\221\364\174\150\342\310\350\257\054
\352\311\176\256\273\052\075\015\025\334\064\225\266\030\164\250
\152\017\307\264\364\023\304\344\133\355\012\322\244\227\114\052
\355\057\154\022\211\075\361\047\160\252\152\003\122\041\237\100
\250\147\120\362\363\132\037\337\337\043\366\334\170\116\346\230
\117\125\072\123\343\357\362\364\237\307\174\330\130\257\051\042
\227\270\340\275\221\056\260\166\354\127\021\317\357\051\104\363
\351\205\172\140\143\344\135\063\211\027\331\061\252\332\326\363
\030\065\162\317\207\053\057\143\043\204\135\204\214\077\127\240
\210\374\231\221\050\046\151\231\324\217\227\104\276\216\325\110
\261\244\050\051\361\025\264\341\345\236\335\370\217\246\157\046
\327\011\074\072\034\021\016\246\154\067\367\255\104\207\054\050
\307\330\164\202\263\320\157\112\127\273\065\051\047\240\213\350
\041\247\207\144\066\135\314\330\026\254\307\262\047\100\222\125
\070\050\215\121\156\335\024\147\123\154\161\134\046\204\115\165
\132\266\176\140\126\251\115\255\373\233\036\227\363\015\331\322
\227\124\167\332\075\022\267\340\036\357\010\006\254\371\205\207
\351\242\334\257\176\030\022\203\375\126\027\101\056\325\051\202
\175\231\364\061\366\161\251\317\054\001\047\245\005\271\252\262
\110\116\052\357\237\223\122\121\225\074\122\163\216\126\114\027
\100\300\011\050\344\213\152\110\123\333\354\315\125\125\361\306
\370\351\242\054\114\246\321\046\137\176\257\132\114\332\037\246
\362\034\054\176\256\002\026\322\126\320\057\127\123\107\350\222

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Trust for "GeoTrust Universal CA 2"
Issuer: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
Serial Number: 1 (0x1)
Subject: CN=GeoTrust Universal CA 2,O=GeoTrust Inc.,C=US
Not Valid Before: Thu Mar 04 05:00:00 2004
Not Valid After: Sun Mar 04 05:00:00 2029
Fingerprint (MD5): 34:fc:b8:d0:36:db:9e:14:b3:c2:f2:db:8f:e4:94:c7
Fingerprint (SHA1): 37:9a:19:7b:41:85:45:35:0c:a6:03:69:f3:3c:2e:af:47:4f:20:79

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GeoTrust Universal CA 2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\067\232\031\173\101\205\105\065\014\246\003\151\363\074\056\257
\107\117\040\171

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\064\374\270\320\066\333\236\024\263\302\362\333\217\344\224\307

END

CKA_ISSUER

MULTILINE_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\023\015\107\145\157\124\162\165
\163\164\040\111\156\143\056\061\040\060\036\006\003\125\004\003
\023\027\107\145\157\124\162\165\163\164\040\125\156\151\166\145
\162\163\141\154\040\103\101\040\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\001\001

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "QuoVadis Root Certification Authority"
Issuer: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis Limited,C=BM
Serial Number:3a:b6:50:8b
Subject: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis Limited,C=BM
Not Valid Before:

Mon Mar 19 18:33:33 2001

Not Valid After: Wed Mar 17 18:33:33 2021

Fingerprint (MD5): 27:de:36:fe:72:b7:00:03:00:9d:f4:f0:1e:6c:04:24

Fingerprint (SHA1): de:3f:40:bd:50:93:d3:9b:6c:60:f6:da:bc:07:62:01:00:89:76:c9

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "QuoVadis Root Certification Authority"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\004\072\266\120\213

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\320\060\202\004\270\240\003\002\001\002\002\004\072
\266\120\213\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\177\061\013\060\011\006\003\125\004\006\023\002\102
\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126
\141\144\151\163\040\114\151\155\151\164\145\144\061\045\060\043
\006\003\125\004\013\023\034\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\061\056\060\054\006\003\125\004\003\023\045\121\165
\157\126\141\144\151\163\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162

\151\164\171\060\036\027\015\060\061\060\063\061\071\061\070\063
\063\063\063\132\027\015\062\061\060\063\061\067\061\070\063\063
\063\063\132\060\177\061\013\060\011\006\003\125\004\006\023\002
\102\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157
\126\141\144\151\163\040\114\151\155\151\164\145\144\061\045\060
\043\006\003\125\004\013\023\034\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\061\056\060\054\006\003\125\004\003\023\045\121
\165\157\126\141\144\151\163\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\277\141\265\225\123\272\127\374\372\362\147
\013\072\032\337\021\200\144\225\264\321\274\315\172\317\366\051
\226\056\044\124\100\044\070\367\032\205\334\130\114\313\244\047
\102\227\320\237\203\212\303\344\006\003\133\000\245\121\036\160
\004\164\342\301\324\072\253\327\255\073\007\030\005\216\375\203
\254\352\146\331\030\033\150\212\365\127\032\230\272\365\355\166
\075\174\331\336\224\152\073\113\027\301\325\217\275\145\070\072
\225\320\075\125\066\116\337\171\127\061\052\036\330\131\145\111
\130\040\230\176\253\137\176\237\351\326\115\354\203\164\251\307
\154\330\356\051\112\205\052\006\024\371\124\346\323\332\145\007
\213\143\067\022\327\320\354\303\173\040\101\104\243\355\313\240
\027\341\161\145\316\035\146\061\367\166\001\031\310\175\003\130
\266\225\111\035\246\022\046\350\306\014\166\340\343\146\313\352
\135\246\046\356\345\314\137\275\147\247\001\047\016\242\312\124
\305\261\172\225\035\161\036\112\051\212\003\334\152\105\301\244
\031\136\157\066\315\303\242\260\267\376\134\070\342\122\274\370
\104\103\346\220\273\002\003\001\000\001\243\202\002\122\060\202
\002\116\060\075\006\010\053\006\001\005\005\007\001\001\004\061
\060\057\060\055\006\010\053\006\001\005\005\007\060\001\206\041
\150\164\164\160\163\072\057\057\157\143\163\160\056\161\165\157
\166\141\144\151\163\157\146\146\163\150\157\162\145\056\143\157
\155\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\202\001\032\006\003\125\035\040\004\202\001\021\060
\202\001\015\060\202\001\011\006\011\053\006\001\004\001\276\130
\000\001\060\201\373\060\201\324\006\010\053\006\001\005\005\007
\002\002\060\201\307\032\201\304\122\145\154\151\141\156\143\145
\040\157\156\040\164\150\145\040\121\165\157\126\141\144\151\163
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\145\040\142\171\040\141\156\171\040\160\141\162\164\171\040\141
\163\163\165\155\145\163\040\141\143\143\145\160\164\141\156\143
\145\040\157\146\040\164\150\145\040\164\150\145\156\040\141\160
\160\154\151\143\141\142\154\145\040\163\164\141\156\144\141\162
\144\040\164\145\162\155\163\040\141\156\144\040\143\157\156\144
\151\164\151\157\156\163\040\157\146\040\165\163\145\054\040\143
\145\162\164\151\146\151\143\141\164\151\157\156\040\160\162\141
\143\164\151\143\145\163\054\040\141\156\144\040\164\150\145\040

\121\165\157\126\141\144\151\163\040\103\145\162\164\151\146\151
\143\141\164\145\040\120\157\154\151\143\171\056\060\042\006\010
\053\006\001\005\005\007\002\001\026\026\150\164\164\160\072\057
\057\167\167\167\056\161\165\157\166\141\144\151\163\056\142\155
\060\035\006\003\125\035\016\004\026\004\024\213\113\155\355\323
\051\271\006\031\354\071\071\251\360\227\204\152\313\357\337\060
\201\256\006\003\125\035\043\004\201\246\060\201\243\200\024\213
\113\155\355\323\051\271\006\031\354\071\071\251\360\227\204\152
\313\357\337\241\201\204\244\201\201\060\177\061\013\060\011\006
\003\125\004\006\023\002\102\115\061\031\060\027\006\003\125\004
\012\023\020\121\165\157\126\141\144\151\163\040\114\151\155\151
\164\145\144\061\045\060\043\006\003\125\004\013\023\034\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\061\056\060\054\006\003
\125\004\003\023\045\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\202\004\072\266\120\213
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\212\324\024\265\376\364\232\222\247\031\324\244
\176\162\030\217\331\150\174\122\044\335\147\157\071\172\304\252
\136\075\342\130\260\115\160\230\204\141\350\033\343\151\030\016
\316\373\107\120\240\116\377\360\044\037\275\262\316\365\047\374
\354\057\123\252\163\173\003\075\164\156\346\026\236\353\245\056
\304\277\126\047\120\053\142\272\276\113\034\074\125\134\101\035
\044\276\202\040\107\135\325\104\176\172\026\150\337\175\115\121
\160\170\127\035\063\036\375\002\231\234\014\315\012\005\117\307
\273\216\244\165\372\112\155\261\200\216\011\126\271\234\032\140
\376\135\301\327\172\334\021\170\320\326\135\301\267\325\255\062
\231\003\072\212\314\124\045\071\061\201\173\023\042\121\272\106
\154\241\273\236\372\004\154\111\046\164\217\322\163\353\314\060
\242\346\352\131\042\207\370\227\365\016\375\352\314\222\244\026
\304\122\030\352\041\316\261\361\346\204\201\345\272\251\206\050
\362\103\132\135\022\235\254\036\331\250\345\012\152\247\177\240
\207\051\317\362\211\115\324\354\305\342\346\172\320\066\043\212
\112\164\066\371

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "QuoVadis Root Certification Authority"

Issuer: CN=QuoVadis Root

Certification Authority,OU=Root Certification Authority,O=QuoVadis Limited,C=BM

Serial Number:3a:b6:50:8b

Subject: CN=QuoVadis Root Certification Authority,OU=Root Certification Authority,O=QuoVadis

```
Limited,C=BM
# Not Valid Before: Mon Mar 19 18:33:33 2001
# Not Valid After: Wed Mar 17 18:33:33 2021
# Fingerprint (MD5): 27:de:36:fe:72:b7:00:03:00:9d:f4:f0:1e:6c:04:24
# Fingerprint (SHA1): de:3f:40:bd:50:93:d3:9b:6c:60:f6:da:bc:07:62:01:00:89:76:c9
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\336\077\100\275\120\223\323\233\154\140\366\332\274\007\142\001
\000\211\166\311
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\047\336\066\376\162\267\000\003\000\235\364\360\036\154\004\044
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\045\060\043\006\003
\125\004\013\023\034\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171\061\056\060\054\006\003\125\004\003\023\045\121\165\157\126
\141\144\151\163\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\004\072\266\120\213
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Sonera Class2 CA"
# Issuer: CN=Sonera Class2 CA,O=Sonera,C=FI
# Serial Number: 29 (0x1d)
# Subject: CN=Sonera Class2 CA,O=Sonera,C=FI
# Not Valid Before: Fri Apr 06 07:29:40 2001
# Not Valid After: Tue Apr 06 07:29:40 2021
# Fingerprint
(MD5): a3:ec:75:0f:2e:88:df:fa:48:01:4e:0b:5c:48:6f:fb
# Fingerprint (SHA1): 37:f7:6d:e6:07:7c:90:c5:b1:3e:93:1a:b7:41:10:b4:f2:e4:9a:27
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Sonera Class2 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\017\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141
\061\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162
\141\040\103\154\141\163\163\062\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\017\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141
\061\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162
\141\040\103\154\141\163\163\062\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\035
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\040\060\202\002\010\240\003\002\001\002\002\001\035
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061\017
\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141\061
\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162\141
\040\103\154\141\163\163\062\040\103\101\060\036\027\015\060\061
\060\064\060\066\060\067\062\071\064\060\132\027\015\062\061\060
\064\060\066\060\067\062\071\064\060\132\060\071\061\013\060\011
\006\003\125\004\006\023\002\106\111\061\017\060\015\006\003\125
\004\012\023\006\123\157\156\145\162\141\061\031\060\027\006\003
\125\004\003\023\020\123\157\156\145\162\141\040\103\154\141\163
\163\062\040\103\101\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\220\027\112\065\235\312\360\015\226\307
\104\372\026\067\374\110\275\275\177\200\055\065\073\341\157\250
\147\251\277\003\034\115\214\157\062\107\325\101\150\244\023\004
\301\065\014\232\204\103\374\134\035\377\211\263\350\027\030\315
\221\137\373\211\343\352\277\116\135\174\033\046\323\165\171\355
\346\204\343\127\345\255\051\304\364\072\050\347\245\173\204\066
\151\263\375\136\166\275\243\055\231\323\220\116\043\050\175\030
\143\361\124\073\046\235\166\133\227\102\262\377\256\360\116\354
\335\071\225\116\203\006\177\347\111\100\310\305\001\262\124\132
\146\035\075\374\371\351\074\012\236\201\270\160\360\001\213\344
\043\124\174\310\256\370\220\036\000\226\162\324\124\317\141\043
\274\352\373\235\002\225\321\266\271\161\072\151\010\077\017\264
\341\102\307\210\365\077\230\250\247\272\034\340\161\161\357\130
```

\127\201\120\172\134\153\164\106\016\203\003\230\303\216\250\156
\362\166\062\156\047\203\302\163\363\334\030\350\264\223\352\165
\104\153\004\140\040\161\127\207\235\363\276\240\220\043\075\212
\044\341\332\041\333\303\002\003\001\000\001\243\063\060\061\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\021\006\003\125\035\016\004\012\004\010\112\240\252\130\204
\323\136\074\060\013\006\003\125\035\017\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003
\202\001\001\000\132\316\207\371\026\162\025\127\113\035\331\233
\347\242\046\060\354\223\147\337\326\055\322\064\257\367\070\245
\316\253\026\271\253\057\174\065\313\254\320\017\264\114\053\374
\200\357\153\214\221\137\066\166\367\333\263\033\031\352\364\262
\021\375\141\161\104\277\050\263\072\035\277\263\103\350\237\277
\334\061\010\161\260\235\215\326\064\107\062\220\306\145\044\367
\240\112\174\004\163\217\071\157\027\214\162\265\275\113\310\172
\370\173\203\303\050\116\234\011\352\147\077\262\147\004\033\303
\024\332\370\347\111\044\221\320\035\152\372\141\071\357\153\347
\041\165\006\007\330\022\264\041\040\160\102\161\201\332\074\232
\066\276\246\133\015\152\154\232\037\221\173\371\371\357\102\272
\116\116\236\314\014\215\224\334\331\105\234\136\354\102\120\143
\256\364\135\304\261\022\334\312\073\250\056\235\024\132\005\165
\267\354\327\143\342\272\065\266\004\010\221\350\332\235\234\366
\146\265\030\254\012\246\124\046\064\063\322\033\301\324\177\032
\072\216\013\252\062\156\333\374\117\045\237\331\062\307\226\132
\160\254\337\114

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Sonera Class2 CA"

Issuer: CN=Sonera Class2 CA,O=Sonera,C=FI

Serial Number: 29 (0x1d)

Subject: CN=Sonera Class2 CA,O=Sonera,C=FI

Not Valid Before: Fri Apr 06 07:29:40 2001

Not Valid After: Tue Apr 06 07:29:40 2021

Fingerprint (MD5): a3:ec:75:0f:2e:88:df:fa:48:01:4e:0b:5c:48:6f:fb

Fingerprint (SHA1): 37:f7:6d:e6:07:7c:90:c5:b1:3e:93:1a:b7:41:10:b4:f2:e4:9a:27

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Sonera Class2 CA"

CKA_CERT_SHA1_HASH

MULTILINE_OCTAL

\067\367\155\346\007\174\220\305\261\076\223\032\267\101\020\264


```
\362\344\232\047
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\243\354\165\017\056\210\337\372\110\001\116\013\134\110\157\373
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\017\060\015\006\003\125\004\012\023\006\123\157\156\145\162\141
\061\031\060\027\006\003\125\004\003\023\020\123\157\156\145\162
\141\040\103\154\141\163\163\062\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\035
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "VeriSign Class 3 Public Primary Certification Authority - G3"
# Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign\, Inc. - For
authorized
  use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Serial Number:9b:7e:06:49:a3:3e:62:b9:d5:ee:90:48:71:29:ef:57
# Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign\, Inc. - For
authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US
# Not Valid Before: Fri Oct 01 00:00:00 1999
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (MD5): cd:68:b6:a7:c7:c4:ce:75:e0:1d:4f:57:44:61:92:09
# Fingerprint (SHA1): 13:2d:0d:45:53:4b:69:97:cd:b2:d5:c3:39:e2:55:76:60:9b:5c:c6
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
```

\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\021\000\233\176\006\111\243\076\142\271\325\356\220\110\161
\051\357\127

END

CKA_VALUE MULTILINE_OCTAL

\060\202\004\032\060\202\003\002\002\021\000\233\176\006\111\243
\076\142\271\325\356\220\110\161\051\357\127\060\015\006\011\052
\206\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111
\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145
\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164
\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050
\143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156
\054\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164
\150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171
\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123
\151\147\156\040\103\154\141\163\163\040\063\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060
\061\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066
\062\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012
\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056
\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123

\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162
\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040
\061\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111
\156\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060
\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156
\040\103\154\141\163\163\040\063\040\120\165\142\154\151\143\040
\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143
\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040
\055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012
\002\202\001\001\000\313\272\234\122\374\170\037\032\036\157\033
\067\163\275\370\311\153\224\022\060\117\360\066\107\365\320\221
\012\365\027\310\245\141\301\026\100\115\373\212\141\220\345\166
\040\301\021\006\175\253\054\156\246\365\021\101\216\372\055\255
\052\141\131\244\147\046\114\320\350\274\122\133\160\040\004\130
\321\172\311\244\151\274\203\027\144\255\005\213\274\320\130\316
\215\214\365\353\360\102\111\013\235\227\047\147\062\156\341\256
\223\025\034\160\274\040\115\057\030\336\222\210\350\154\205\127
\021\032\351\176\343\046\021\124\242\105\226\125\203\312\060\211
\350\334\330\243\355\052\200\077\177\171\145\127\076\025\040\146
\010\057\225\223\277\252\107\057\250\106\227\360\022\342\376\302
\012\053\121\346\166\346\267\106\267\342\015\246\314\250\303\114
\131\125\211\346\350\123\134\034\352\235\360\142\026\013\247\311
\137\014\360\336\302\166\316\257\367\152\362\372\101\246\242\063
\024\311\345\172\143\323\236\142\067\325\205\145\236\016\346\123
\044\164\033\136\035\022\123\133\307\054\347\203\111\073\025\256
\212\150\271\127\227\002\003\001\000\001\060\015\006\011\052\206
\110\206\367\015\001\001\005\005\000\003\202\001\001\000\021\024
\226\301\253\222\010\367\077\057\311\262\376\344\132\237\144\336
\333\041\117\206\231\064\166\066\127\335\320\025\057\305\255\177
\025\037\067\142\163\076\324\347\137\316\027\003\333\065\372\053
\333\256\140\011\137\036\137\217\156\273\013\075\352\132\023\036
\014\140\157\265\300\265\043\042\056\007\013\313\251\164\313\107
\273\035\301\327\245\153\314\057\322\102\375\111\335\247\211\317
\123\272\332\000\132\050\277\202\337\370\272\023\035\120\206\202
\375\216\060\217\051\106\260\036\075\065\332\070\142\026\030\112
\255\346\266\121\154\336\257\142\353\001\320\036\044\376\172\217
\022\032\022\150\270\373\146\231\024\024\105\134\256\347\256\151
\027\201\053\132\067\311\136\052\364\306\342\241\134\124\233\246
\124\000\317\360\361\301\307\230\060\032\073\066\026\333\243\156
\352\375\255\262\302\332\357\002\107\023\212\300\361\263\061\255
\117\034\341\117\234\257\017\014\235\367\170\015\330\364\065\126
\200\332\267\155\027\217\235\036\201\144\341\376\305\105\272\255
\153\271\012\172\116\117\113\204\356\113\361\175\335\021

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "VeriSign Class 3 Public Primary Certification Authority - G3"

Issuer: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

Serial Number:9b:7e:06:49:a3:3e:62:b9:d5:ee:90:48:71:29:ef:57

Subject: CN=VeriSign Class 3 Public Primary Certification Authority - G3,OU=(c) 1999 VeriSign\, Inc. - For authorized use only,OU=VeriSign Trust Network,O=VeriSign\, Inc.,C=US

Not Valid Before: Fri Oct 01 00:00:00 1999

Not Valid After: Wed Jul 16 23:59:59 2036

Fingerprint (MD5): cd:68:b6:a7:c7:c4:ce:75:e0:1d:4f:57:44:61:92:09

Fingerprint (SHA1): 13:2d:0d:45:53:4b:69:97:cd:b2:d5:c3:39:e2:55:76:60:9b:5c:c6

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE

CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "VeriSign Class 3 Public Primary Certification Authority - G3"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\023\055\015\105\123\113\151\227\315\262\325\303\071\342\125\166
\140\233\134\306

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\315\150\266\247\307\304\316\165\340\035\117\127\104\141\222\011
END

CKA_ISSUER MULTILINE_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\063\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\021\000\233\176\006\111\243\076\142\271\325\356\220\110\161
\051\357\127

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "VeriSign, Inc."

Issuer: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet

Serial Number:03:c7:8f:37:db:92:28:df:3c:bb:1a:ad:82:fa:67:10

Subject: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet

Not Valid Before: Tue Apr 09 00:00:00 1996

Not Valid After: Wed Jan 07 23:59:59 2004

Fingerprint (MD5): dd:75:3f:56:bf:bb:c5:a1:7a:15:53:c6:90:f9:fb:cc

Fingerprint

(SHA1): 24:a4:0a:1f:57:36:43:a6:7f:0a:4b:07:49:f6:a2:2b:f2:8a:bb:6b

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "VeriSign, Inc."

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\141\061\021\060\017\006\003\125\004\007\023\010\111\156\164
\145\162\156\145\164\061\027\060\025\006\003\125\004\012\023\016
\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061\063
\060\061\006\003\125\004\013\023\052\126\145\162\151\123\151\147
\156\040\103\157\155\155\145\162\143\151\141\154\040\123\157\146
\164\167\141\162\145\040\120\165\142\154\151\163\150\145\162\163
\040\103\101

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\141\061\021\060\017\006\003\125\004\007\023\010\111\156\164
\145\162\156\145\164\061\027\060\025\006\003\125\004\012\023\016
\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061\063
\060\061\006\003\125\004\013\023\052\126\145\162\151\123\151\147
\156\040\103\157\155\155\145\162\143\151\141\154\040\123\157\146
\164\167\141\162\145\040\120\165\142\154\151\163\150\145\162\163
\040\103\101

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\003\307\217\067\333\222\050\337\074\273\032\255\202\372
\147\020

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\100\060\202\001\251\002\020\003\307\217\067\333\222
\050\337\074\273\032\255\202\372\147\020\060\015\006\011\052\206

\110\206\367\015\001\001\002\005\000\060\141\061\021\060\017\006
\003\125\004\007\023\010\111\156\164\145\162\156\145\164\061\027
\060\025\006\003\125\004\012\023\016\126\145\162\151\123\151\147
\156\054\040\111\156\143\056\061\063\060\061\006\003\125\004\013
\023\052\126\145\162\151\123\151\147\156\040\103\157\155\155\145
\162\143\151\141\154\040\123\157\146\164\167\141\162\145\040\120
\165\142\154\151\163\150\145\162\163\040\103\101\060\036\027\015
\071\066\060\064\060\071\060\060\060\060\060\060\132\027\015\060
\064\060\061\060\067\062\063\065\071\065\071\132\060\141\061\021
\060\017\006\003\125\004\007\023\010\111\156\164\145\162\156\145
\164\061\027\060\025\006\003\125\004\012\023\016\126\145\162\151
\123\151\147\156\054\040\111\156\143\056\061\063\060\061\006\003
\125\004\013\023\052\126\145\162\151\123\151\147\156\040\103\157
\155\155\145\162\143\151\141\154\040\123\157\146\164\167\141\162
\145\040\120\165\142\154\151\163\150\145\162\163\040\103\101\060
\201\237\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\201\215\000\060\201\211\002\201\201\000\303\323\151\145
\122\001\224\124\253\050\306\142\030\263\124\125\305\104\207\105
\112\073\302\176\330\323\327\310\200\206\215\330\014\361\026\234
\314\153\251\051\262\217\166\163\222\310\305\142\246\074\355\036
\005\165\360\023\000\154\024\115\324\230\220\007\276\151\163\201
\270\142\116\061\036\321\374\311\014\353\175\220\277\256\264\107
\121\354\157\316\144\065\002\326\175\147\005\167\342\217\331\121
\327\373\227\031\274\076\327\167\201\306\103\335\362\335\337\312
\243\203\213\313\101\301\075\042\110\110\246\031\002\003\001\000
\001\060\015\006\011\052\206\110\206\367\015\001\001\002\005\000
\003\201\201\000\265\274\260\165\152\211\242\206\275\144\170\303
\247\062\165\162\021\252\046\002\027\140\060\114\343\110\064\031
\271\122\112\121\030\200\376\123\055\173\325\061\214\305\145\231
\101\101\057\362\256\143\172\350\163\231\025\220\032\037\172\213
\101\320\216\072\320\315\070\064\104\320\165\370\352\161\304\201
\031\070\027\065\112\256\305\076\062\346\041\270\005\300\223\341
\307\070\134\330\367\223\070\144\220\355\124\316\312\323\323\320
\137\357\004\233\336\002\202\335\210\051\261\303\117\245\315\161
\144\061\074\074

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "VeriSign, Inc."

Issuer: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet

Serial Number:03:c7:8f:37:db:92:28:df:3c:bb:1a:ad:82:fa:67:10

#

Subject: OU=VeriSign Commercial Software Publishers CA,O=VeriSign\, Inc.,L=Internet

Not Valid Before: Tue Apr 09 00:00:00 1996

```
# Not Valid After: Wed Jan 07 23:59:59 2004
# Fingerprint (MD5): dd:75:3f:56:bf:bb:c5:a1:7a:15:53:c6:90:f9:fb:cc
# Fingerprint (SHA1): 24:a4:0a:1f:57:36:43:a6:7f:0a:4b:07:49:f6:a2:2b:f2:8a:bb:6b
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "VeriSign, Inc."
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\044\244\012\037\127\066\103\246\177\012\113\007\111\366\242\053
\362\212\273\153
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\335\165\077\126\277\273\305\241\172\025\123\306\220\371\373\314
END
CKA_ISSUER MULTILINE_OCTAL
\060\141\061\021\060\017\006\003\125\004\007\023\010\111\156\164
\145\162\156\145\164\061\027\060\025\006\003\125\004\012\023\016
\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061\063
\060\061\006\003\125\004\013\023\052\126\145\162\151\123\151\147
\156\040\103\157\155\155\145\162\143\151\141\154\040\123\157\146
\164\167\141\162\145\040\120\165\142\154\151\163\150\145\162\163
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\003\307\217\067\333\222\050\337\074\273\032\255\202\372
\147\020
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Microsoft Root Authority"
# Issuer: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.
# Serial Number:c1:00:8b:3c:3c:88:11:d1:3e:f6:63:ec:df:40
# Subject: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.
# Not Valid Before: Fri Jan 10 07:00:00 1997
# Not Valid After: Thu Dec 31 07:00:00 2020
# Fingerprint (MD5): 2a:95:4e:ca:79:b2:87:45:73:d9:2d:90:ba:f9:9f:b6
#
Fingerprint (SHA1): a4:34:89:15:9a:52:0f:0d:93:d0:32:cc:af:37:e7:fe:20:a8:b4:19
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

```
CKA_LABEL UTF8 "Microsoft Root Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\000\301\000\213\074\074\210\021\321\076\366\143\354\337
\100
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\022\060\202\002\372\240\003\002\001\002\002\017\000
\301\000\213\074\074\210\021\321\076\366\143\354\337\100\060\015
\006\011\052\206\110\206\367\015\001\001\004\005\000\060\160\061
\053\060\051\006\003\125\004\013\023\042\103\157\160\171\162\151
\147\150\164\040\050\143\051\040\061\071\071\067\040\115\151\143
\162\157\163\157\146\164\040\103\157\162\160\056\061\036\060\034
\006\003\125\004\013\023\025\115\151\143\162\157\163\157\146\164
\040\103\157\162\160\157\162\141\164\151\157\156\061\041\060\037
\006\003\125\004\003\023\030\115\151\143\162\157\163\157\146\164
\040\122\157\157\164\040\101\165\164\150\157\162\151\164\171\060
\036\027\015\071\067\060\061\061\060\060\067\060\060\060\060\132
\027\015\062\060\061\062\063\061\060\067\060\060\060\060\132\060
\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160\171
\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040\115
\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061\036
\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163\157
\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061\041
\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163\157
\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151\164
```


\171\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001
\001\000\251\002\275\301\160\346\073\362\116\033\050\237\227\170
\136\060\352\242\251\215\045\137\370\376\225\114\243\267\376\235
\242\040\076\174\121\242\233\242\217\140\062\153\321\102\144\171
\356\254\166\311\124\332\362\353\234\206\034\217\237\204\146\263
\305\153\172\142\043\326\035\074\336\017\001\222\350\226\304\277
\055\146\232\232\150\046\231\320\072\054\277\014\265\130\046\301
\106\347\012\076\070\226\054\251\050\071\250\354\111\203\102\343
\204\017\273\232\154\125\141\254\202\174\241\140\055\167\114\351
\231\264\144\073\232\120\034\061\010\044\024\237\251\347\221\053
\030\346\075\230\143\024\140\130\005\145\237\035\067\122\207\367
\247\357\224\002\306\033\323\277\125\105\263\211\200\277\072\354
\124\224\116\256\375\247\172\155\164\116\257\030\314\226\011\050
\041\000\127\220\140\151\067\273\113\022\007\074\126\377\133\373
\244\146\012\010\246\322\201\126\127\357\266\073\136\026\201\167
\004\332\366\276\256\200\225\376\260\315\177\326\247\032\162\134
\074\312\274\360\010\243\042\060\263\006\205\311\263\040\167\023
\205\337\002\003\001\000\001\243\201\250\060\201\245\060\201\242
\006\003\125\035\001\004\201\232\060\201\227\200\020\133\320\160
\357\151\162\236\043\121\176\024\262\115\216\377\313\241\162\060
\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160\171
\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040\115
\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061\036
\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163\157
\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061\041
\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163\157
\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151\164
\171\202\017\000\301\000\213\074\074\210\021\321\076\366\143\354
\337\100\060\015\006\011\052\206\110\206\367\015\001\001\004\005
\000\003\202\001\001\000\225\350\013\300\215\363\227\030\065\355
\270\001\044\330\167\021\363\134\140\062\237\236\013\313\076\005
\221\210\217\311\072\346\041\362\360\127\223\054\265\240\107\310
\142\357\374\327\314\073\073\132\251\066\124\151\376\044\155\077
\311\314\252\336\005\174\335\061\215\075\237\020\160\152\273\376
\022\117\030\151\300\374\320\103\343\021\132\040\117\352\142\173
\257\252\031\310\053\067\045\055\276\145\241\022\212\045\017\143
\243\367\124\034\371\041\311\326\025\363\122\254\156\103\062\007
\375\202\027\370\345\147\154\015\121\366\275\361\122\307\275\347
\304\060\374\040\061\011\210\035\225\051\032\115\325\035\002\245
\361\200\340\003\264\133\364\261\335\310\127\356\145\111\307\122
\124\266\264\003\050\022\377\220\326\360\010\217\176\270\227\305
\253\067\054\344\172\344\250\167\343\166\240\000\320\152\077\301
\322\066\212\340\101\022\250\065\152\033\152\333\065\341\324\034
\004\344\250\105\004\310\132\063\070\156\115\034\015\142\267\012
\242\214\323\325\124\077\106\315\034\125\246\160\333\022\072\207
\223\165\237\247\322\240

END

```
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Microsoft Root Authority"
# Issuer: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright
(c) 1997 Microsoft Corp.
# Serial Number:c1:00:8b:3c:3c:88:11:d1:3e:f6:63:ec:df:40
# Subject: CN=Microsoft Root Authority,OU=Microsoft Corporation,OU=Copyright (c) 1997 Microsoft Corp.
# Not Valid Before: Fri Jan 10 07:00:00 1997
# Not Valid After: Thu Dec 31 07:00:00 2020
# Fingerprint (MD5): 2a:95:4e:ca:79:b2:87:45:73:d9:2d:90:ba:f9:9f:b6
# Fingerprint (SHA1): a4:34:89:15:9a:52:0f:0d:93:d0:32:cc:af:37:e7:fe:20:a8:b4:19
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\244\064\211\025\232\122\017\015\223\320\062\314\257\067\347\376
\040\250\264\031
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\052\225\116\312\171\262\207\105\163\331\055\220\272\371\237\266
END
CKA_ISSUER MULTILINE_OCTAL
\060\160\061\053\060\051\006\003\125\004\013\023\042\103\157\160
\171\162\151\147\150\164\040\050\143\051\040\061\071\071\067\040
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\056\061
\036\060\034\006\003\125\004\013\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\041\060\037\006\003\125\004\003\023\030\115\151\143\162\157\163
\157\146\164\040\122\157\157\164\040\101\165\164\150\157\162\151
\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\017\000\301\000\213\074\074\210\021\321\076\366\143\354\337
\100
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
```

```
# Certificate "Microsoft Root Certificate Authority"
# Issuer: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com
# Serial Number:79:ad:16:a1:4a:a0:a5:ad:4c:73:58:f4:07:13:2e:65
# Subject: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com
# Not Valid Before: Wed May 09 23:19:22
2001
# Not Valid After: Sun May 09 23:28:13 2021
# Fingerprint (MD5): e1:c0:7e:a0:aa:bb:d4:b7:7b:84:c2:28:11:78:08:a7
# Fingerprint (SHA1): cd:d4:ee:ae:60:00:ac:7f:40:c3:80:2c:17:1e:30:14:80:30:c0:72
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\171\255\026\241\112\240\245\255\114\163\130\364\007\023
\056\145
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\231\060\202\003\201\240\003\002\001\002\002\020\171
\255\026\241\112\240\245\255\114\163\130\364\007\023\056\145\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\137
\061\023\060\021\006\012\011\222\046\211\223\362\054\144\001\031
\026\003\143\157\155\061\031\060\027\006\012\011\222\046\211\223
\362\054\144\001\031\026\011\155\151\143\162\157\163\157\146\164
\061\055\060\053\006\003\125\004\003\023\044\115\151\143\162\157
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146
```

\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\060
\036\027\015\060\061\060\065\060\071\062\063\061\071\062\062\132
\027\015\062\061\060\065\060\071\062\063\062\070\061\063\132\060
\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144\001
\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046\211
\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157\146
\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143\162
\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\363\135\372\200\147\324\132\247\251\014\054\220\040\320\065
\010\074\165\204\315\267\007\211\234\211\332\336\316\303\140\372
\221\150\132\236\224\161\051\030\166\174\302\340\310\045\166\224
\016\130\372\004\064\066\346\337\257\367\200\272\351\130\013\053
\223\345\235\005\343\167\042\221\367\064\144\074\042\221\035\136
\341\011\220\274\024\376\374\165\130\031\341\171\267\007\222\243
\256\210\131\010\330\237\007\312\003\130\374\150\051\155\062\327
\322\250\313\113\374\341\013\110\062\117\346\353\270\255\117\344
\134\157\023\224\231\333\225\325\165\333\250\032\267\224\221\264
\167\133\365\110\014\217\152\171\175\024\160\004\175\155\257\220
\365\332\160\330\107\267\277\233\057\154\347\005\267\341\021\140
\254\171\221\024\174\305\326\246\344\341\176\325\303\176\345\222
\322\074\000\265\066\202\336\171\341\155\363\265\156\370\237\063
\311\313\122\175\163\230\066\333\213\241\153\242\225\227\233\243
\336\302\115\046\377\006\226\147\045\006\310\347\254\344\356\022
\063\225\061\231\310\065\010\116\064\312\171\123\325\265\276\143
\062\131\100\066\300\245\116\004\115\075\333\133\007\063\344\130
\277\357\077\123\144\330\102\131\065\127\375\017\105\174\044\004
\115\236\326\070\164\021\227\042\220\316\150\104\164\222\157\325
\113\157\260\206\343\307\066\102\240\320\374\301\300\132\371\243
\141\271\060\107\161\226\012\026\260\221\300\102\225\357\020\177
\050\152\343\052\037\261\344\315\003\077\167\161\004\307\040\374
\111\017\035\105\210\244\327\313\176\210\255\216\055\354\105\333
\304\121\004\311\052\374\354\206\236\232\021\227\133\336\316\123
\210\346\342\267\375\254\225\302\050\100\333\357\004\220\337\201
\063\071\331\262\105\245\043\207\006\245\125\211\061\273\006\055
\140\016\101\030\175\037\056\265\227\313\021\353\025\325\044\245
\224\357\025\024\211\375\113\163\372\062\133\374\321\063\000\371
\131\142\160\007\062\352\056\253\100\055\173\312\335\041\147\033
\060\231\217\026\252\043\250\101\321\260\156\021\233\066\304\336
\100\164\234\341\130\145\301\140\036\172\133\070\310\217\273\004
\046\174\324\026\100\345\266\153\154\252\206\375\000\277\316\301
\065\002\003\001\000\001\243\121\060\117\060\013\006\003\125\035
\017\004\004\003\002\001\306\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\016\254\202\140\100\126\047\227\345\045\023\374\052
\341\012\123\225\131\344\244\060\020\006\011\053\006\001\004\001

\202\067\025\001\004\003\002\001\000\060\015\006\011\052\206\110
\206\367\015\001\001\005\005\000\003\202\002\001\000\305\021\115
\003\072\140\335\135\122\021\167\217\262\273\066\310\262\005\277
\264\267\250\330\040\235\134\023\003\266\034\042\372\006\023\065
\266\310\143\324\232\107\157\046\127\322\125\361\004\261\046\137
\326\251\120\150\240\274\322\270\156\314\303\351\254\337\031\315
\170\254\131\164\254\146\064\066\304\033\076\154\070\114\063\016
\060\022\015\243\046\376\121\123\000\377\257\132\116\204\015\017
\037\344\155\005\056\116\205\113\215\154\063\157\124\322\144\253
\277\120\257\175\172\071\240\067\355\143\003\017\374\023\006\316
\026\066\324\124\073\225\033\121\142\072\345\115\027\324\005\071
\222\232\047\250\133\252\275\354\273\276\343\040\211\140\161\154
\126\263\245\023\320\155\016\043\176\225\003\355\150\075\362\330
\143\270\153\115\266\350\060\265\341\312\224\113\367\242\252\135
\231\060\262\075\247\302\121\154\050\040\001\044\047\053\113\000
\267\235\021\153\160\276\262\020\202\274\014\233\150\320\215\073
\044\207\252\231\050\162\235\063\137\131\220\275\365\336\223\236
\072\142\132\064\071\342\210\125\035\271\006\260\301\211\153\055
\327\151\303\031\022\066\204\320\311\240\332\377\057\151\170\262
\345\172\332\353\327\014\300\367\275\143\027\270\071\023\070\242
\066\133\173\362\205\126\152\035\144\142\301\070\342\252\277\121
\146\242\224\365\022\234\146\042\020\153\362\267\060\222\055\362
\051\360\075\073\024\103\150\242\361\234\051\067\313\316\070\040
\045\155\174\147\363\176\044\022\044\003\010\201\107\354\245\236
\227\365\030\327\317\273\325\357\166\226\357\375\316\333\126\235
\225\240\102\371\227\130\341\327\061\042\323\137\131\346\076\156
\042\000\352\103\204\266\045\333\331\363\010\126\150\300\144\153
\035\174\354\266\223\242\142\127\156\056\330\347\130\217\304\061
\111\046\335\336\051\065\207\365\060\161\160\133\024\074\151\275
\211\022\175\353\056\243\376\330\177\236\202\132\122\012\053\301
\103\053\331\060\210\237\310\020\373\211\215\346\241\205\165\063
\176\154\236\333\163\023\144\142\151\245\057\175\312\226\155\237
\370\004\115\060\222\075\156\041\024\041\311\075\340\303\375\212
\153\235\112\375\321\241\235\231\103\167\077\260\332

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Microsoft Root Certificate Authority"

Issuer: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com

Serial Number: 79:ad:16:a1:4a:a0:a5:ad:4c:73:58:f4:07:13:2e:65

Subject: CN=Microsoft Root Certificate Authority,DC=microsoft,DC=com

Not Valid Before: Wed May 09 23:19:22 2001

Not Valid After: Sun May 09 23:28:13 2021

Fingerprint (MD5): e1:c0:7e:a0:aa:bb:d4:b7:7b:84:c2:28:11:78:08:a7

```

# Fingerprint (SHA1): cd:d4:ee:ae:60:00:ac:7f:40:c3:80:2c:17:1e:30:14:80:30:c0:72
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Root Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\315\324\356\256\140\000\254\177\100\303\200\054\027\036\060\024
\200\060\300\162
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\341\300\176\240\252\273\324\267\173\204\302\050\021\170\010\247
END
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\023\060\021\006\012\011\222\046\211\223\362\054\144
\001\031\026\003\143\157\155\061\031\060\027\006\012\011\222\046
\211\223\362\054\144\001\031\026\011\155\151\143\162\157\163\157
\146\164\061\055\060\053\006\003\125\004\003\023\044\115\151\143
\162\157\163\157\146\164\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\171\255\026\241\112\240\245\255\114\163\130\364\007\023
\056\145
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Microsoft Root Certificate Authority 2010"
# Issuer: CN=Microsoft Root Certificate Authority 2010,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:28:cc:3a:25:bf:ba:44:ac:44:9a:9b:58:6b:43:39:aa
# Subject: CN=Microsoft Root Certificate Authority 2010,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Wed Jun 23 21:57:24 2010
# Not Valid After: Sat Jun 23 22:04:01 2035
# Fingerprint (MD5): a2:66:bb:7d:cc:38:a5:62:63:13:61:bb:f6:1d:d1:1b
# Fingerprint (SHA1): 3b:1e:fd:3a:66:ea:28:b1:66:97:39:47:03:a7:2c:a3:40:a0:5b:d5
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE

```

```
CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2010"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\060
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\060
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\050\314\072\045\277\272\104\254\104\232\233\130\153\103
\071\252
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\355\060\202\003\325\240\003\002\001\002\002\020\050
\314\072\045\277\272\104\254\104\232\233\130\153\103\071\252\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\201
\210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023
\060\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147
\164\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145
\144\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025
\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162
\141\164\151\157\156\061\062\060\060\006\003\125\004\003\023\051
\115\151\143\162\157\163\157\146\164\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\061\060\060\036\027\015\061\060\060
\066\062\063\062\061\065\067\062\064\132\027\015\063\065\060\066
\062\063\062\062\060\064\060\061\132\060\201\210\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125
\004\010\023\012\127\141\163\150\151\156\147\164\157\156\061\020
```

\060\016\006\003\125\004\007\023\007\122\145\144\155\157\156\144
\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157
\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156
\061\062\060\060\006\003\125\004\003\023\051\115\151\143\162\157
\163\157\146\164\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040
\062\060\061\060\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\271\010\236\050\344\344\354\006\116\120\150
\263\101\305\173\353\256\266\216\257\201\272\042\104\037\145\064
\151\114\276\160\100\027\362\026\173\342\171\375\206\355\015\071
\364\033\250\255\222\220\036\313\075\166\217\132\331\265\221\020
\056\074\005\215\212\155\044\124\347\037\355\126\255\203\264\120
\234\025\245\027\164\210\131\040\374\010\305\204\166\323\150\324
\157\050\170\316\134\270\363\120\220\104\377\343\143\137\276\241
\232\054\226\025\004\326\007\376\036\204\041\340\102\061\021\304
\050\066\224\317\120\244\142\236\311\326\253\161\000\262\133\014
\346\226\324\012\044\226\365\377\306\325\267\033\327\313\267\041
\142\257\022\334\241\135\067\343\032\373\032\106\230\300\233\300
\347\143\037\052\010\223\002\176\036\152\216\362\237\030\211\344
\042\205\242\261\204\127\100\377\365\016\330\157\234\355\342\105
\061\001\315\027\351\177\260\201\105\343\252\041\100\046\241\162
\252\247\117\074\001\005\176\356\203\130\261\136\006\143\231\142
\221\170\202\267\015\223\014\044\152\264\033\333\047\354\137\225
\004\077\223\112\060\365\227\030\263\247\371\031\247\223\063\035
\001\310\333\042\122\134\327\045\311\106\371\242\373\207\131\103
\276\233\142\261\215\055\206\104\032\106\254\170\141\176\060\011
\372\256\211\304\101\052\042\146\003\221\071\105\234\307\213\014
\250\312\015\057\373\122\352\014\367\143\063\043\235\376\260\037
\255\147\326\247\120\003\306\004\160\143\265\054\261\206\132\103
\267\373\256\371\156\051\156\041\041\101\046\006\214\311\303\356
\260\302\205\223\241\271\205\331\346\062\154\113\114\077\326\135
\243\345\265\235\167\303\234\300\125\267\164\000\343\270\070\253
\203\227\120\341\232\102\044\035\306\300\243\060\321\032\132\310
\122\064\367\163\361\307\030\037\063\255\172\354\313\101\140\363
\043\224\040\302\110\105\254\134\121\306\056\200\302\342\167\025
\275\205\207\355\066\235\226\221\356\000\265\243\160\354\237\343
\215\200\150\203\166\272\257\135\160\122\042\026\342\146\373\272
\263\305\302\367\076\057\167\246\312\336\301\246\306\110\114\303
\067\121\043\323\047\327\270\116\160\226\360\241\104\166\257\170
\317\232\341\146\023\002\003\001\000\001\243\121\060\117\060\013
\006\003\125\035\017\004\004\003\002\001\206\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\325\366\126\313\217\350\242\134\142
\150\321\075\224\220\133\327\316\232\030\304\060\020\006\011\053
\006\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006
\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001
\000\254\245\226\214\277\273\256\246\366\327\161\207\103\061\126

\210\375\034\062\161\133\065\267\324\360\221\362\257\067\342\024
\361\363\002\046\005\076\026\024\177\024\272\270\117\373\211\262
\262\347\324\011\314\155\271\133\073\144\145\160\146\267\362\261
\132\337\032\002\363\365\121\270\147\155\171\363\277\126\173\344
\204\271\053\036\233\100\234\046\064\371\107\030\230\151\330\034
\327\266\321\277\217\141\302\147\304\265\357\140\103\216\020\033
\066\111\344\040\312\255\247\301\261\047\145\011\370\315\365\133
\052\320\204\063\363\357\037\362\365\234\013\130\223\067\240\165
\240\336\162\336\154\165\052\146\042\365\214\006\060\126\237\100
\271\060\252\100\167\025\202\327\213\354\300\323\262\275\203\305
\167\014\036\256\257\031\123\240\115\171\161\237\017\257\060\316
\147\371\326\054\314\042\101\172\007\362\227\102\030\316\131\171
\020\125\336\157\020\344\270\332\203\146\100\026\011\150\043\133
\227\056\046\232\002\273\127\214\305\270\272\151\142\062\200\211
\236\241\375\300\222\174\173\053\063\031\204\052\143\305\000\150
\142\372\237\107\215\231\172\105\072\247\351\355\356\151\102\265
\363\201\233\107\126\020\173\374\160\066\204\030\163\352\357\371
\227\115\236\063\043\335\046\013\272\052\267\077\104\334\203\047
\377\275\141\131\053\021\267\312\117\333\305\213\014\034\061\256
\062\370\370\271\102\367\177\334\141\232\166\261\132\004\341\021
\075\146\105\267\030\161\276\311\044\205\326\363\324\272\101\064
\135\022\055\045\271\215\246\023\110\155\113\260\007\175\231\223
\011\141\201\164\127\046\212\253\151\343\344\331\307\210\314\044
\330\354\122\044\134\036\274\221\024\342\226\336\353\012\332\236
\335\137\263\133\333\324\202\354\306\040\120\207\045\100\072\373
\307\356\315\376\063\345\156\303\204\011\125\003\045\071\300\351
\065\135\145\061\250\366\277\240\011\315\051\307\263\066\062\056
\334\225\363\203\301\132\317\213\215\366\352\263\041\370\244\355
\036\061\016\266\114\021\253\140\013\244\022\043\042\027\243\066
\144\202\221\004\022\340\253\157\036\313\120\005\141\264\100\377
\131\206\161\321\325\063\151\174\251\163\212\070\327\144\014\361
\151

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Microsoft Root Certificate Authority 2010"

Issuer: CN=Microsoft Root Certificate Authority 2010,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

Serial Number:28:cc:3a:25:bf:ba:44:ac:44:9a:9b:58:6b:43:39:aa

Subject: CN=Microsoft Root Certificate Authority 2010,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

Not Valid Before: Wed Jun 23 21:57:24 2010

Not Valid After: Sat Jun 23 22:04:01 2035

Fingerprint (MD5): a2:66:bb:7d:cc:38:a5:62:63:13:61:bb:f6:1d:d1:1b

Fingerprint (SHA1): 3b:1e:fd:3a:66:ea:28:b1:66:97:39:47:03:a7:2c:a3:40:a0:5b:d5

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Microsoft Root Certificate Authority 2010"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\073\036\375\072\146\352\050\261\146\227\071\107\003\247\054\243
\100\240\133\325

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\242\146\273\175\314\070\245\142\143\023\141\273\366\035\321\033

END

CKA_ISSUER MULTILINE_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\062\060\060\006\003\125\004\003
\023\051\115\151\143\162\157\163\157\146\164\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\040\062\060\061\060

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\050\314\072\045\277\272\104\254\104\232\233\130\153\103
\071\252

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "GTE CyberTrust Global Root"

Issuer: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US

Serial Number: 421 (0x1a5)

Subject: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US

Not Valid Before: Thu Aug 13 00:29:00 1998

Not Valid

After: Mon Aug 13 23:59:00 2018

Fingerprint (MD5): ca:3d:d3:68:f1:03:5c:d0:32:fa:b8:2b:59:e8:5a:db

Fingerprint (SHA1): 97:81:79:50:d8:1c:96:70:cc:34:d8:09:cf:79:44:31:36:7e:f4:74

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GTE CyberTrust Global Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\030\060\026\006\003\125\004\012\023\017\107\124\105\040\103\157
\162\160\157\162\141\164\151\157\156\061\047\060\045\006\003\125
\004\013\023\036\107\124\105\040\103\171\142\145\162\124\162\165
\163\164\040\123\157\154\165\164\151\157\156\163\054\040\111\156
\143\056\061\043\060\041\006\003\125\004\003\023\032\107\124\105
\040\103\171\142\145\162\124\162\165\163\164\040\107\154\157\142
\141\154\040\122\157\157\164

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\030\060\026\006\003\125\004\012\023\017\107\124\105\040\103\157
\162\160\157\162\141\164\151\157\156\061\047\060\045\006\003\125
\004\013\023\036\107\124\105\040\103\171\142\145\162\124\162\165
\163\164\040\123\157\154\165\164\151\157\156\163\054\040\111\156
\143\056\061\043\060\041\006\003\125\004\003\023\032\107\124\105
\040\103\171\142\145\162\124\162\165\163\164\040\107\154\157\142
\141\154\040\122\157\157\164

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\002\001\245

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\132\060\202\001\303\002\002\001\245\060\015\006\011
\052\206\110\206\367\015\001\001\004\005\000\060\165\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\030\060\026\006\003
\125\004\012\023\017\107\124\105\040\103\157\162\160\157\162\141
\164\151\157\156\061\047\060\045\006\003\125\004\013\023\036\107
\124\105\040\103\171\142\145\162\124\162\165\163\164\040\123\157
\154\165\164\151\157\156\163\054\040\111\156\143\056\061\043\060
\041\006\003\125\004\003\023\032\107\124\105\040\103\171\142\145
\162\124\162\165\163\164\040\107\154\157\142\141\154\040\122\157
\157\164\060\036\027\015\071\070\060\070\061\063\060\060\062\071
\060\060\132\027\015\061\070\060\070\061\063\062\063\065\071\060
\060\132\060\165\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\030\060\026\006\003\125\004\012\023\017\107\124\105\040
\103\157\162\160\157\162\141\164\151\157\156\061\047\060\045\006
\003\125\004\013\023\036\107\124\105\040\103\171\142\145\162\124
\162\165\163\164\040\123\157\154\165\164\151\157\156\163\054\040
\111\156\143\056\061\043\060\041\006\003\125\004\003\023\032\107
\124\105\040\103\171\142\145\162\124\162\165\163\164\040\107\154
\157\142\141\154\040\122\157\157\164\060\201\237\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\201\215\000\060

```
\201\211\002\201\201\000\225\017\240\266\360\120\234\350\172\307
\210\315\335\027\016\056\260\224\320\033\075\016\366\224\300\212
\224\307\006\310\220\227\310\270\144\032\172\176\154\074\123\341
\067\050\163\140\177\262\227\123\007\237\123\371\155\130\224\322
\257\215\155\210\147\200\346\355\262\225\317\162\061\312\245\034
\162\272\134\002\347\144\102\347\371\251\054\326\072\015\254\215
\102\252\044\001\071\346\234\077\001\205\127\015\130\207\105\370
\323\205\252\223\151\046\205\160\110\200\077\022\025\307\171\264
\037\005\057\073\142\231\002\003\001\000\001\060\015\006\011\052
\206\110\206\367\015\001\001\004\005\000\003\201\201\000\155\353
\033\011\351\136\331\121\333\147\042\141\244\052\074\110\167\343
\240\174\246\336\163\242\024\003\205\075\373\253\016\060\305\203
\026\063\201\023\010\236\173\064\116\337\100\310\164\327\271\175
\334\364\166\125\175\233\143\124\030\351\360\352\363\134\261\331
\213\102\036\271\300\225\116\272\372\325\342\174\365\150\141\277
\216\354\005\227\137\133\260\327\243\205\064\304\044\247\015\017
\225\223\357\313\224\330\236\037\235\134\205\155\307\252\256\117
\037\042\265\315\225\255\272\247\314\371\253\013\172\177
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "GTE CyberTrust Global Root"

Issuer: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US

Serial Number: 421 (0x1a5)

Subject: CN=GTE CyberTrust Global Root,OU=GTE CyberTrust Solutions\, Inc.,O=GTE Corporation,C=US

Not Valid Before: Thu Aug 13 00:29:00 1998

Not Valid After: Mon Aug 13 23:59:00 2018

Fingerprint (MD5): ca:3d:d3:68:f1:03:5c:d0:32:fa:b8:2b:59:e8:5a:db

Fingerprint (SHA1): 97:81:79:50:d8:1c:96:70:cc:34:d8:09:cf:79:44:31:36:7e:f4:74

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GTE CyberTrust Global Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\227\201\171\120\330\034\226\160\314\064\330\011\317\171\104\061
\066\176\364\164
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\312\075\323\150\361\003\134\320\062\372\270\053\131\350\132\333
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\125\123\061
```

```
\030\060\026\006\003\125\004\012\023\017\107\124\105\040\103\157
\162\160\157\162\141\164\151\157\156\061\047\060\045\006\003\125
\004\013\023\036\107\124\105\040\103\171\142\145\162\124\162\165
\163\164\040\123\157\154\165\164\151\157\156\163\054\040\111\156
\143\056\061\043\060\041\006\003\125\004\003\023\032\107\124\105
\040\103\171\142\145\162\124\162\165\163\164\040\107\154\157\142
\141\154\040\122\157\157\164
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\002\001\245
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Thawte Server CA"

Issuer: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte

Server CA,OU=Certification Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

Serial Number: 1 (0x1)

Subject: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services

Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

Not Valid Before: Thu Aug 01 00:00:00 1996

Not Valid After: Thu Dec 31 23:59:59 2020

Fingerprint (MD5): c5:70:c4:a2:ed:53:78:0c:e8:10:53:81:64:cb:d0:1d

Fingerprint (SHA1): 23:e5:94:94:51:95:f2:41:48:03:b4:d5:64:d2:a3:a3:f5:d8:8b:8c

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Thawte Server CA"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141
\167\164\145\056\143\157\155
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141
\167\164\145\056\143\157\155

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\023\060\202\002\174\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000\060
\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101\061
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162
\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007\023
\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006\003
\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156\163
\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003\125
\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151\163
\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124\150
\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061\046
\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027\163
\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141\167
\164\145\056\143\157\155\060\036\027\015\071\066\060\070\060\061
\060\060\060\060\060\060\132\027\015\062\060\061\062\063\061\062
\063\065\071\065\071\132\060\201\304\061\013\060\011\006\003\125
\004\006\023\002\132\101\061\025\060\023\006\003\125\004\010\023
\014\127\145\163\164\145\162\156\040\103\141\160\145\061\022\060
\020\006\003\125\004\007\023\011\103\141\160\145\040\124\157\167
\156\061\035\060\033\006\003\125\004\012\023\024\124\150\141\167
\164\145\040\103\157\156\163\165\154\164\151\156\147\040\143\143
\061\050\060\046\006\003\125\004\013\023\037\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145
\163\040\104\151\166\151\163\151\157\156\061\031\060\027\006\003
\125\004\003\023\020\124\150\141\167\164\145\040\123\145\162\166

```
\145\162\040\103\101\061\046\060\044\006\011\052\206\110\206\367
\015\001\011\001\026\027\163\145\162\166\145\162\055\143\145\162
\164\163\100\164\150\141\167\164\145\056\143\157\155\060\201\237
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\201\215\000\060\201\211\002\201\201\000\323\244\120\156\310\377
\126\153\346\317\135\266\352\014\150\165\107\242\252\302\332\204
\045\374\250\364\107\121\332\205\265\040\164\224\206\036\017\165
\311\351\010\141\365\006\155\060\156\025\031\002\351\122\300\142
\333\115\231\236\342\152\014\104\070\315\376\276\343\144\011\160
\305\376\261\153\051\266\057\111\310\073\324\047\004\045\020\227
\057\347\220\155\300\050\102\231\327\114\103\336\303\365\041\155
\124\237\135\303\130\341\300\344\331\133\260\270\334\264\173\337
\066\072\302\265\146\042\022\326\207\015\002\003\001\000\001\243
\023\060\021\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001
\004\005\000\003\201\201\000\007\372\114\151\134\373\225\314\106
\356\205\203\115\041\060\216\312\331\250\157\111\032\346\332\121
\343\140\160\154\204\141\021\241\032\310\110\076\131\103\175\117
\225\075\241\213\267\013\142\230\172\165\212\335\210\116\116\236
\100\333\250\314\062\164\271\157\015\306\343\263\104\013\331\212
\157\232\051\233\231\030\050\073\321\343\100\050\232\132\074\325
\265\347\040\033\213\312\244\253\215\351\121\331\342\114\054\131
\251\332\271\262\165\033\366\102\362\357\307\362\030\371\211\274
\243\377\212\043\056\160\107
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Thawte Server CA"

Issuer: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte

Server CA,OU=Certification Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

Serial Number: 1 (0x1)

Subject: 1.2.840.113549.1.9.1=server-certs@thawte.com,CN=Thawte Server CA,OU=Certification Services

Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA

Not Valid Before: Thu Aug 01 00:00:00 1996

Not Valid After: Thu Dec 31 23:59:59 2020

Fingerprint (MD5): c5:70:c4:a2:ed:53:78:0c:c8:10:53:81:64:cb:d0:1d

Fingerprint (SHA1): 23:e5:94:94:51:95:f2:41:48:03:b4:d5:64:d2:a3:a3:f5:d8:8b:8c

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Thawte Server CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\043\345\224\224\121\225\362\101\110\003\264\325\144\322\243\243
```

```

\365\330\213\214
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\305\160\304\242\355\123\170\014\310\020\123\201\144\313\320\035
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\304\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\031\060\027\006\003\125\004\003\023\020\124
\150\141\167\164\145\040\123\145\162\166\145\162\040\103\101\061
\046\060\044\006\011\052\206\110\206\367\015\001\011\001\026\027
\163\145\162\166\145\162\055\143\145\162\164\163\100\164\150\141
\167\164\145\056\143\157\155
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Thawte Premium Server CA"
# Issuer: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA
# Serial Number: 1 (0x1)
# Subject: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA
# Not Valid Before: Thu Aug 01 00:00:00 1996
# Not Valid After: Thu Dec 31 23:59:59 2020
# Fingerprint (MD5): 06:9f:69:79:16:66:90:02:1b:8c:8c:a2:c3:07:6f:3a
# Fingerprint (SHA1): 62:7f:8d:78:27:65:63:99:d2:7d:7f:90:44:c9:fe:b3:f3:3e:fa:9a
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thawte Premium Server CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT

```


MULTILINE_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157
\155

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157
\155

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\001

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\047\060\202\002\220\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000\060
\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101\061
\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145\162
\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007\023
\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006\003
\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156\163
\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003\125
\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151\163

\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124\150
\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145\162
\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110\206
\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055\163
\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157\155
\060\036\027\015\071\066\060\070\060\061\060\060\060\060\060\060
\132\027\015\062\060\061\062\063\061\062\063\065\071\065\071\132
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157
\155\060\201\237\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\201\215\000\060\201\211\002\201\201\000\322\066
\066\152\213\327\302\133\236\332\201\101\142\217\070\356\111\004
\125\326\320\357\034\033\225\026\107\357\030\110\065\072\122\364
\053\152\006\217\073\057\352\126\343\257\206\215\236\027\367\236
\264\145\165\002\115\357\313\011\242\041\121\330\233\320\147\320
\272\015\222\006\024\163\324\223\313\227\052\000\234\134\116\014
\274\372\025\122\374\362\104\156\332\021\112\156\010\237\057\055
\343\371\252\072\206\163\266\106\123\130\310\211\005\275\203\021
\270\163\077\252\007\215\364\102\115\347\100\235\034\067\002\003
\001\000\001\243\023\060\021\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206
\367\015\001\001\004\005\000\003\201\201\000\046\110\054\026\302
\130\372\350\026\164\014\252\252\137\124\077\362\327\311\170\140
\136\136\156\067\143\042\167\066\176\262\027\304\064\271\365\010
\205\374\311\001\070\377\115\276\362\026\102\103\347\273\132\106
\373\301\306\021\037\361\112\260\050\106\311\303\304\102\175\274
\372\253\131\156\325\267\121\210\021\343\244\205\031\153\202\114
\244\014\022\255\351\244\256\077\361\303\111\145\232\214\305\310
\076\045\267\224\231\273\222\062\161\007\360\206\136\355\120\047
\246\015\246\043\371\273\313\246\007\024\102

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

```
# Trust for "Thawte Premium Server CA"
# Issuer: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA
# Serial Number: 1 (0x1)
# Subject: 1.2.840.113549.1.9.1=premium-server@thawte.com,CN=Thawte Premium Server CA,OU=Certification
Services Division,O=Thawte Consulting cc,L=Cape Town,ST=Western Cape,C=ZA
# Not Valid Before: Thu Aug 01 00:00:00 1996
# Not Valid After: Thu Dec 31 23:59:59 2020
# Fingerprint (MD5): 06:9f:69:79:16:66:90:02:1b:8c:8c:a2:c3:07:6f:3a
# Fingerprint (SHA1): 62:7f:8d:78:27:65:63:99:d2:7d:7f:90:44:c9:fe:b3:f3:3e:fa:9a
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Thawte Premium Server CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\142\177\215\170\047\145\143\231\322\175\177\220\104\311\376\263
\363\076\372\232
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\006\237\151\171\026\146\220\002\033\214\214\242\303\007\157\072
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\316\061\013\060\011\006\003\125\004\006\023\002\132\101
\061\025\060\023\006\003\125\004\010\023\014\127\145\163\164\145
\162\156\040\103\141\160\145\061\022\060\020\006\003\125\004\007
\023\011\103\141\160\145\040\124\157\167\156\061\035\060\033\006
\003\125\004\012\023\024\124\150\141\167\164\145\040\103\157\156
\163\165\154\164\151\156\147\040\143\143\061\050\060\046\006\003
\125\004\013\023\037\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\123\145\162\166\151\143\145\163\040\104\151\166\151
\163\151\157\156\061\041\060\037\006\003\125\004\003\023\030\124
\150\141\167\164\145\040\120\162\145\155\151\165\155\040\123\145
\162\166\145\162\040\103\101\061\050\060\046\006\011\052\206\110
\206\367\015\001\011\001\026\031\160\162\145\155\151\165\155\055
\163\145\162\166\145\162\100\164\150\141\167\164\145\056\143\157
\155
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Equifax Secure Global eBusiness CA-1"
# Issuer: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US
# Serial Number: 1 (0x1)
# Subject: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US
# Not Valid Before: Mon Jun 21 04:00:00 1999
# Not Valid After: Sun Jun 21 04:00:00 2020
# Fingerprint (MD5): 8f:5d:77:06:27:c4:98:3c:5b:93:78:e7:d7:7d:9b:cc
# Fingerprint
(SHA1): 7e:78:4a:10:1c:82:65:cc:2d:e1:f1:6d:47:b4:40:ca:d9:0a:19:45
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Equifax Secure Global eBusiness CA-1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141
\170\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060
\053\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040
\123\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102
\165\163\151\156\145\163\163\040\103\101\055\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141
\170\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060
\053\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040
\123\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102
\165\163\151\156\145\163\163\040\103\101\055\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\220\060\202\001\371\240\003\002\001\002\002\001\001
\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000\060
\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061\034
\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141\170
\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060\053
\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040\123
\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102\165
\163\151\156\145\163\163\040\103\101\055\061\060\036\027\015\071
\071\060\066\062\061\060\064\060\060\060\060\132\027\015\062\060
\060\066\062\061\060\064\060\060\060\060\132\060\132\061\013\060
```

\011\006\003\125\004\006\023\002\125\123\061\034\060\032\006\003
\125\004\012\023\023\105\161\165\151\146\141\170\040\123\145\143
\165\162\145\040\111\156\143\056\061\055\060\053\006\003\125\004
\003\023\044\105\161\165\151\146\141\170\040\123\145\143\165\162
\145\040\107\154\157\142\141\154\040\145\102\165\163\151\156\145
\163\163\040\103\101\055\061\060\201\237\060\015\006\011\052\206
\110\206\367\015\001\001\001\005\000\003\201\215\000\060\201\211
\002\201\201\000\272\347\027\220\002\145\261\064\125\074\111\302
\121\325\337\247\321\067\217\321\347\201\163\101\122\140\233\235
\241\027\046\170\255\307\261\350\046\224\062\265\336\063\215\072
\057\333\362\232\172\132\163\230\243\134\351\373\212\163\033\134
\347\303\277\200\154\315\251\364\326\053\300\367\371\231\252\143
\242\261\107\002\017\324\344\121\072\022\074\154\212\132\124\204
\160\333\301\305\220\317\162\105\313\250\131\300\315\063\235\077
\243\226\353\205\063\041\034\076\036\076\140\156\166\234\147\205
\305\310\303\141\002\003\001\000\001\243\146\060\144\060\021\006
\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\037\006\003\125\035\043\004\030\060\026\200\024\276\250
\240\164\162\120\153\104\267\311\043\330\373\250\377\263\127\153
\150\154\060\035\006\003\125\035\016\004\026\004\024\276\250\240
\164\162\120\153\104\267\311\043\330\373\250\377\263\127\153\150
\154\060\015\006\011\052\206\110\206\367\015\001\001\004\005\000
\003\201\201\000\060\342\001\121\252\307\352\137\332\271\320\145
\017\060\326\076\332\015\024\111\156\221\223\047\024\061\357\304
\367\055\105\370\354\307\277\242\101\015\043\264\222\371\031\000
\147\275\001\257\315\340\161\374\132\317\144\304\340\226\230\320
\243\100\342\001\212\357\047\007\361\145\001\212\104\055\006\145
\165\122\300\206\020\040\041\137\154\153\017\154\256\011\034\257
\362\242\030\064\304\165\244\163\034\361\215\334\357\255\371\263
\166\264\222\277\334\225\020\036\276\313\310\073\132\204\140\031
\126\224\251\125

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Equifax Secure Global eBusiness CA-1"

Issuer: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US

Serial Number: 1 (0x1)

Subject: CN=Equifax Secure Global eBusiness CA-1,O=Equifax Secure Inc.,C=US

Not Valid Before: Mon Jun 21 04:00:00 1999

Not Valid After: Sun Jun 21 04:00:00 2020

Fingerprint (MD5): 8f:5d:77:06:27:c4:98:3c:5b:93:78:e7:d7:9b:cc

Fingerprint (SHA1): 7e:78:4a:10:1c:82:65:cc:2d:e1:f1:6d:47:b4:40:ca:d9:0a:19:45

```
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Equifax Secure Global eBusiness CA-1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\176\170\112\020\034\202\145\314\055\341\361\155\107\264\100\312
\331\012\031\105
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\217\135\167\006\047\304\230\074\133\223\170\347\327\175\233\314
END
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\034\060\032\006\003\125\004\012\023\023\105\161\165\151\146\141
\170\040\123\145\143\165\162\145\040\111\156\143\056\061\055\060
\053\006\003\125\004\003\023\044\105\161\165\151\146\141\170\040
\123\145\143\165\162\145\040\107\154\157\142\141\154\040\145\102
\165\163\151\156\145\163\163\040\103\101\055\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Equifax"
# Issuer: OU=Equifax Secure Certificate Authority,O=Equifax,C=US
# Serial Number:35:de:f4:cf
# Subject: OU=Equifax Secure Certificate Authority,O=Equifax,C=US
# Not Valid Before: Sat Aug 22 16:41:51 1998
# Not Valid After: Wed Aug 22 16:41:51 2018
# Fingerprint (MD5): 67:cb:9d:c0:13:24:8a:82:9b:b2:17:1e:d1:1b:ec:d4
#
Fingerprint (SHA1): d2:32:09:ad:23:d3:14:23:21:74:e4:0d:7f:9d:62:13:97:86:63:3a
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Equifax"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141
```

\170\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151
\146\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141
\170\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151
\146\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\004\065\336\364\317

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\040\060\202\002\211\240\003\002\001\002\002\004\065
\336\364\317\060\015\006\011\052\206\110\206\367\015\001\001\005
\005\000\060\116\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\020\060\016\006\003\125\004\012\023\007\105\161\165\151
\146\141\170\061\055\060\053\006\003\125\004\013\023\044\105\161
\165\151\146\141\170\040\123\145\143\165\162\145\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\060\036\027\015\071\070\060\070\062\062\061\066\064\061
\065\061\132\027\015\061\070\060\070\062\062\061\066\064\061\065
\061\132\060\116\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\020\060\016\006\003\125\004\012\023\007\105\161\165\151
\146\141\170\061\055\060\053\006\003\125\004\013\023\044\105\161
\165\151\146\141\170\040\123\145\143\165\162\145\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\060\201\237\060\015\006\011\052\206\110\206\367\015\001
\001\001\005\000\003\201\215\000\060\201\211\002\201\201\000\301
\135\261\130\147\010\142\356\240\232\055\037\010\155\221\024\150
\230\012\036\376\332\004\157\023\204\142\041\303\321\174\316\237
\005\340\270\001\360\116\064\354\342\212\225\004\144\254\361\153
\123\137\005\263\313\147\200\277\102\002\216\376\335\001\011\354
\341\000\024\117\374\373\360\014\335\103\272\133\053\341\037\200
\160\231\025\127\223\026\361\017\227\152\267\302\150\043\034\314
\115\131\060\254\121\036\073\257\053\326\356\143\105\173\305\331
\137\120\322\343\120\017\072\210\347\277\024\375\340\307\271\002
\003\001\000\001\243\202\001\011\060\202\001\005\060\160\006\003
\125\035\037\004\151\060\147\060\145\240\143\240\141\244\137\060
\135\061\013\060\011\006\003\125\004\006\023\002\125\123\061\020
\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141\170
\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151\146
\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151\146
\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\061

```
\015\060\013\006\003\125\004\003\023\004\103\122\114\061\060\032
\006\003\125\035\020\004\023\060\021\201\017\062\060\061\070\060
\070\062\062\061\066\064\061\065\061\132\060\013\006\003\125\035
\017\004\004\003\002\001\006\060\037\006\003\125\035\043\004\030
\060\026\200\024\110\346\150\371\053\322\262\225\327\107\330\043
\040\020\117\063\230\220\237\324\060\035\006\003\125\035\016\004
\026\004\024\110\346\150\371\053\322\262\225\327\107\330\043\040
\020\117\063\230\220\237\324\060\014\006\003\125\035\023\004\005
\060\003\001\001\377\060\032\006\011\052\206\110\206\366\175\007
\101\000\004\015\060\013\033\005\126\063\056\060\143\003\002\006
\300\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000
\003\201\201\000\130\316\051\352\374\367\336\265\316\002\271\027
\265\205\321\271\343\340\225\314\045\061\015\000\246\222\156\177
\266\222\143\236\120\225\321\232\157\344\021\336\143\205\156\230
\356\250\377\132\310\323\125\262\146\161\127\336\300\041\353\075
\052\247\043\111\001\004\206\102\173\374\356\177\242\026\122\265
\147\147\323\100\333\073\046\130\262\050\167\075\256\024\167\141
\326\372\052\146\047\240\015\372\247\163\134\352\160\361\224\041
\145\104\137\372\374\357\051\150\251\242\207\171\357\171\357\117
\254\007\167\070
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Equifax"

Issuer: OU=Equifax Secure Certificate Authority,O=Equifax,C=US

Serial Number:35:de:f4:cf

Subject: OU=Equifax Secure Certificate Authority,O=Equifax,C=US

Not Valid Before: Sat Aug 22 16:41:51 1998

Not Valid After: Wed Aug 22 16:41:51 2018

Fingerprint (MD5): 67:cb:9d:c0:13:24:8a:82:9b:b2:17:1e:d1:1b:ec:d4

Fingerprint (SHA1): d2:32:09:ad:23:d3:14:23:21:74:e4:0d:7f:9d:62:13:97:86:63:3a

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Equifax"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\322\062\011\255\043\323\024\043\041\164\344\015\177\235\142\023
\227\206\143\072
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\147\313\235\300\023\044\212\202\233\262\027\036\321\033\354\324
```

END


```
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\012\023\007\105\161\165\151\146\141
\170\061\055\060\053\006\003\125\004\013\023\044\105\161\165\151
\146\141\170\040\123\145\143\165\162\145\040\103\145\162\164\151
\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\065\336\364\317
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED
CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Class 1 Primary CA"
# Issuer: CN=Class 1 Primary CA,O=Certplus,C=FR
# Serial Number:86:fe:1d:5f:c3:81:f8:47:d7:33:2c:73:94:75:7b:37
# Subject: CN=Class 1 Primary CA,O=Certplus,C=FR
# Not Valid Before: Wed Jul 07 17:01:00 1999
# Not Valid After: Mon Jul 06 23:59:59 2020
# Fingerprint (MD5): 21:24:a6:81:c1:d8:f2:19:af:49:98:e3:9d:fe:0b:f4
# Fingerprint (SHA1): 6a:17:45:70:a9:16:fb:e8:44:53:ee:d3:d0:70:a1:d8:da:44:28:29
```

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Class 1 Primary CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154
\165\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141
\163\163\040\061\040\120\162\151\155\141\162\171\040\103\101
END
```

```
CKA_ID
UTF8 "0"
```

```
CKA_ISSUER MULTILINE_OCTAL
\060\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154
\165\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141
\163\163\040\061\040\120\162\151\155\141\162\171\040\103\101
END
```

```
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\206\376\035\137\303\201\370\107\327\063\054\163\224
\165\173\067
```

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\222\060\202\002\172\240\003\002\001\002\002\021\000
\206\376\035\137\303\201\370\107\327\063\054\163\224\165\173\067
\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060
\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061\021
\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154\165
\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141\163
\163\040\061\040\120\162\151\155\141\162\171\040\103\101\060\036
\027\015\071\071\060\067\060\067\061\067\060\061\060\060\132\027
\015\062\060\060\067\060\066\062\063\065\071\065\071\132\060\075
\061\013\060\011\006\003\125\004\006\023\002\106\122\061\021\060
\017\006\003\125\004\012\023\010\103\145\162\164\160\154\165\163
\061\033\060\031\006\003\125\004\003\023\022\103\154\141\163\163
\040\061\040\120\162\151\155\141\162\171\040\103\101\060\202\001
\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000
\003\202\001\017\000\060\202\001\012\002\202\001\001\000\303\153
\051\310\056\307\256\174\122\005\351\223\211\126\012\132\171\311
\314\334\045\357\207\212\055\005\330\201\027\004\033\072\105\370
\171\016\015\111\324\201\101\310\253\105\373\165\310\025\362\342
\320\274\331\141\154\204\244\023\031\247\331\371\362\111\334\114
\017\306\175\127\264\023\334\036\011\161\051\066\235\200\130\364
\033\330\211\024\353\323\322\223\113\052\361\167\347\152\145\275
\031\345\252\375\014\112\143\341\302\231\264\017\004\266\132\033
\066\074\067\074\277\305\345\136\361\137\127\016\037\307\375\054
\347\344\157\152\233\142\226\071\021\233\146\360\054\266\122\334
\341\047\377\333\155\376\353\253\143\024\035\143\210\143\342\026
\014\371\040\124\017\233\335\025\152\166\203\117\275\047\213\123
\246\067\322\207\362\107\120\122\073\146\351\321\170\032\033\262
\073\151\360\131\074\070\133\321\052\114\063\136\016\312\126\245
\355\055\133\202\203\115\326\070\116\212\126\266\152\057\044\153
\022\060\246\052\336\257\014\273\252\104\022\034\023\305\145\017
\343\375\330\032\061\113\344\077\014\174\105\350\026\063\002\003
\001\000\001\243\201\214\060\201\211\060\017\006\003\125\035\023
\004\010\060\006\001\001\377\002\001\012\060\013\006\003\125\035
\017\004\004\003\002\001\006\060\035\006\003\125\035\016\004\026
\004\024\043\056\337\351\201\264\320\204\375\216\273\251\335\371
\014\243\343\363\111\123\060\021\006\011\140\206\110\001\206\370
\102\001\001\004\004\003\002\001\006\060\067\006\003\125\035\037
\004\060\060\056\060\054\240\052\240\050\206\046\150\164\164\160
\072\057\057\167\167\167\056\143\145\162\164\160\154\165\163\056
\143\157\155\057\103\122\114\057\143\154\141\163\163\061\056\143
\162\154\060\015\006\011\052\206\110\206\367\015\001\001\005\005
\000\003\202\001\001\000\276\046\123\326\136\237\220\077\001\224
\002\354\010\301\210\232\320\247\372\120\015\332\374\224\035\250
\324\120\043\320\237\034\213\141\261\262\252\104\017\254\330\023
\015\325\326\241\350\061\170\320\357\036\203\100\232\345\375\101
\351\222\375\356\243\225\220\363\300\270\157\176\367\064\245\241

```
\337\074\363\336\126\262\307\337\207\046\104\307\342\203\271\023
\157\060\105\161\051\042\025\253\304\333\077\117\363\167\371\231
\030\064\365\163\222\175\067\146\147\111\156\063\232\115\051\224
\213\275\120\071\143\145\017\020\347\173\020\152\321\107\371\236
\045\014\047\051\302\333\010\210\347\252\211\072\105\252\237\111
\262\175\352\150\212\100\376\221\301\302\111\377\041\321\147\016
\032\022\035\112\056\034\373\224\371\155\073\171\062\371\036\051
\221\012\102\226\105\361\357\312\130\017\162\235\014\251\203\274
\062\335\230\004\321\131\341\144\027\275\314\201\243\003\136\226
\140\345\177\026\070\012\153\321\372\263\204\235\052\312\076\373
\102\370\117\350\247\133\050\031\030\255\340\246\146\036\260\051
\041\362\270\231\217\377
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Class 1 Primary CA"

Issuer: CN=Class 1 Primary CA,O=Certplus,C=FR

Serial Number:86:fe:1d:5f:c3:81:f8:47:d7:33:2c:73:94:75:7b:37

Subject: CN=Class 1 Primary CA,O=Certplus,C=FR

Not Valid Before: Wed Jul 07 17:01:00 1999

Not Valid After: Mon Jul 06 23:59:59 2020

Fingerprint (MD5): 21:24:a6:81:c1:d8:f2:19:af:49:98:e3:9d:fe:0b:f4

Fingerprint (SHA1): 6a:17:45:70:a9:16:fb:e8:44:53:ee:d3:d0:70:a1:d8:da:44:28:29

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Class 1 Primary CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\152\027\105\160\251\026\373\350\104\123\356\323\320\160\241\330
\332\104\050\051
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\041\044\246\201\301\330\362\031\257\111\230\343\235\376\013\364
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\075\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\021\060\017\006\003\125\004\012\023\010\103\145\162\164\160\154
\165\163\061\033\060\031\006\003\125\004\003\023\022\103\154\141
\163\163\040\061\040\120\162\151\155\141\162\171\040\103\101
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\021\000\206\376\035\137\303\201\370\107\327\063\054\163\224
```

\165\173\067

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "UTN-USERFirst-Object"

Issuer: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake
City,ST=UT,C=US

#

Serial Number:44:be:0c:8b:50:00:24:b4:11:d3:36:2d:e0:b3:5f:1b

Subject: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake
City,ST=UT,C=US

Not Valid Before: Fri Jul 09 18:31:20 1999

Not Valid After: Tue Jul 09 18:40:36 2019

Fingerprint (MD5): a7:f2:e4:16:06:41:11:50:30:6b:9c:e3:b4:9c:b0:c9

Fingerprint (SHA1): e1:2d:fb:4b:41:d7:d9:c3:2b:30:51:4b:ac:1d:81:d8:38:5e:2d:46

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "UTN-USERFirst-Object"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125

\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\104\276\014\213\120\000\044\264\021\323\066\055\340\263
\137\033

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\004\146\060\202\003\116\240\003\002\001\002\002\020\104
\276\014\213\120\000\044\264\021\323\066\055\340\263\137\033\060
\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201
\225\061\013\060\011\006\003\125\004\006\023\002\125\123\061\013
\060\011\006\003\125\004\010\023\002\125\124\061\027\060\025\006
\003\125\004\007\023\016\123\141\154\164\040\114\141\153\145\040
\103\151\164\171\061\036\060\034\006\003\125\004\012\023\025\124
\150\145\040\125\123\105\122\124\122\125\123\124\040\116\145\164
\167\157\162\153\061\041\060\037\006\003\125\004\013\023\030\150
\164\164\160\072\057\057\167\167\167\056\165\163\145\162\164\162
\165\163\164\056\143\157\155\061\035\060\033\006\003\125\004\003
\023\024\125\124\116\055\125\123\105\122\106\151\162\163\164\055
\117\142\152\145\143\164\060\036\027\015\071\071\060\067\060\071
\061\070\063\061\062\060\132\027\015\061\071\060\067\060\071\061
\070\064\060\063\066\132\060\201\225\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\013\060\011\006\003\125\004\010\023
\002\125\124\061\027\060\025\006\003\125\004\007\023\016\123\141
\154\164\040\114\141\153\145\040\103\151\164\171\061\036\060\034
\006\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124
\122\125\123\124\040\116\145\164\167\157\162\153\061\041\060\037
\006\003\125\004\013\023\030\150\164\164\160\072\057\057\167\167
\167\056\165\163\145\162\164\162\165\163\164\056\143\157\155\061
\035\060\033\006\003\125\004\003\023\024\125\124\116\055\125\123
\105\122\106\151\162\163\164\055\117\142\152\145\143\164\060\202
\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\316
\252\201\077\243\243\141\170\252\061\000\125\225\021\236\047\017
\037\034\337\072\233\202\150\060\300\112\141\035\361\057\016\372
\276\171\367\245\043\357\125\121\226\204\315\333\343\271\156\076
\061\330\012\040\147\307\364\331\277\224\353\107\004\076\002\316
\052\242\135\207\004\011\366\060\235\030\212\227\262\252\034\374
\101\322\241\066\313\373\075\221\272\347\331\160\065\372\344\347
\220\303\233\243\233\323\074\365\022\231\167\261\267\011\340\150
\346\034\270\363\224\143\210\152\152\376\013\166\311\276\364\042
\344\147\271\253\032\136\167\301\205\007\335\015\154\277\356\006
\307\167\152\101\236\247\017\327\373\356\224\027\267\374\205\276
\244\253\304\034\061\335\327\266\321\344\360\357\337\026\217\262
\122\223\327\241\324\211\241\007\056\277\341\001\022\102\036\032
\341\330\225\064\333\144\171\050\377\272\056\021\302\345\350\133

\222\110\373\107\013\302\154\332\255\062\203\101\363\245\345\101
\160\375\145\220\155\372\372\121\304\371\275\226\053\031\004\054
\323\155\247\334\360\177\157\203\145\342\152\253\207\206\165\002
\003\001\000\001\243\201\257\060\201\254\060\013\006\003\125\035
\017\004\004\003\002\001\306\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\332\355\144\164\024\234\024\074\253\335\231\251\275
\133\050\115\213\074\311\330\060\102\006\003\125\035\037\004\073
\060\071\060\067\240\065\240\063\206\061\150\164\164\160\072\057
\057\143\162\154\056\165\163\145\162\164\162\165\163\164\056\143
\157\155\057\125\124\116\055\125\123\105\122\106\151\162\163\164
\055\117\142\152\145\143\164\056\143\162\154\060\051\006\003\125
\035\045\004\042\060\040\006\010\053\006\001\005\005\007\003\003
\006\010\053\006\001\005\005\007\003\010\006\012\053\006\001\004
\001\202\067\012\003\004\060\015\006\011\052\206\110\206\367\015
\001\001\005\005\000\003\202\001\001\000\010\037\122\261\067\104
\170\333\375\316\271\332\225\226\230\252\125\144\200\265\132\100
\335\041\245\305\301\363\137\054\114\310\107\132\151\352\350\360
\065\065\364\320\045\363\310\246\244\207\112\275\033\261\163\010
\275\324\303\312\266\065\273\131\206\167\061\315\247\200\024\256
\023\357\374\261\110\371\153\045\045\055\121\266\054\155\105\301
\230\310\212\126\135\076\356\103\116\076\153\047\216\320\072\113
\205\013\137\323\355\152\247\165\313\321\132\207\057\071\165\023
\132\162\260\002\201\237\276\360\017\204\124\040\142\154\151\324
\341\115\306\015\231\103\001\015\022\226\214\170\235\277\120\242
\261\104\252\152\317\027\172\317\157\017\324\370\044\125\137\360
\064\026\111\146\076\120\106\311\143\161\070\061\142\270\142\271
\363\123\255\154\265\053\242\022\252\031\117\011\332\136\347\223
\306\216\024\010\376\360\060\200\030\240\206\205\115\310\175\327
\213\003\376\156\325\367\235\026\254\222\054\240\043\345\234\221
\122\037\224\337\027\224\163\303\263\301\301\161\005\040\000\170
\275\023\122\035\250\076\315\000\037\310

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "UTN-USERFirst-Object"

Issuer: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake City,ST=UT,C=US

Serial Number:44:be:0c:8b:50:00:24:b4:11:d3:36:2d:e0:b3:5f:1b

Subject: CN=UTN-USERFirst-Object,OU=http://www.usertrust.com,O=The USERTRUST Network,L=Salt Lake City,ST=UT,C=US

Not Valid Before: Fri Jul 09 18:31:20 1999

Not Valid After: Tue Jul 09 18:40:36 2019

Fingerprint (MD5): a7:f2:e4:16:06:41:11:50:30:6b:9c:e3:b4:9c:b0:c9

```

# Fingerprint (SHA1): e1:2d:fb:4b:41:d7:d9:c3:2b:30:51:4b:ac:1d:81:d8:38:5e:2d:46
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UTN-USERFirst-Object"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\341\055\373\113\101\327\331\303\053\060\121\113\254\035\201\330
\070\136\055\106
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\247\362\344\026\006\101\021\120\060\153\234\343\264\234\260\311
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\225\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\125\124\061\027\060
\025\006\003\125\004\007\023\016\123\141\154\164\040\114\141\153
\145\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023
\025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116
\145\164\167\157\162\153\061\041\060\037\006\003\125\004\013\023
\030\150\164\164\160\072\057\057\167\167\167\056\165\163\145\162
\164\162\165\163\164\056\143\157\155\061\035\060\033\006\003\125
\004\003\023\024\125\124\116\055\125\123\105\122\106\151\162\163
\164\055\117\142\152\145\143\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\104\276\014\213\120\000\044\264\021\323\066\055\340\263
\137\033
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "BYTE Root Certification Authority 001"
# Issuer: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR
#
Serial Number:71:8c:2f:39:7c:40:74:40
# Subject: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR
# Not Valid Before: Wed Sep 10 22:01:54 2014
# Not Valid After: Sat Sep 10 22:01:54 2039
# Fingerprint (MD5): fa:fb:82:6a:e5:b3:a2:83:50:9b:83:28:b6:41:42:03
# Fingerprint (SHA1): 3f:0f:eb:17:a7:ef:58:04:cf:d9:0a:77:b7:bb:02:1e:a6:9c:64:18
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "BYTE Root Certification Authority 001"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\060\060\061
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\060\060\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\161\214\057\071\174\100\164\100
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\231\060\202\003\201\240\003\002\001\002\002\010\161
\214\057\071\174\100\164\100\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\132\061\013\060\011\006\003\125\004
\006\023\002\107\122\061\033\060\031\006\003\125\004\012\014\022
\102\131\124\105\040\103\157\155\160\165\164\145\162\040\123\056
\101\056\061\056\060\054\006\003\125\004\003\014\045\102\131\124
\105\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\060
\060\061\060\036\027\015\061\064\060\071\061\060\062\062\060\061
\065\064\132\027\015\063\071\060\071\061\060\062\062\060\061\065
\064\132\060\132\061\013\060\011\006\003\125\004\006\023\002\107
\122\061\033\060\031\006\003\125\004\012\014\022\102\131\124\105
\040\103\157\155\160\165\164\145\162\040\123\056\101\056\061\056
\060\054\006\003\125\004\003\014\045\102\131\124\105\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\060\060\061\060\202
\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005
\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\355
\022\056\027\163\236\157\364\363\231\350\236\010\127\011\064\044
\021\100\037\214\041\176\033\257\070\303\321\307\346\024\345\372
\033\272\136\146\365\045\151\367\355\315\156\202\160\257\272\102
\360\261\031\134\053\374\105\204\030\054\172\027\117\141\205\106
\031\174\316\301\215\237\124\236\167\045\146\017\340\366\370\222
```


\312\051\316\047\127\025\052\154\202\070\155\047\346\276\115\163
\016\163\257\343\161\075\274\011\102\017\325\015\241\355\175\153
\256\367\301\360\154\315\302\227\241\130\375\065\025\226\027\114
\237\277\365\361\071\113\160\267\347\112\154\034\077\301\160\133
\317\326\213\353\357\157\060\350\137\310\106\167\041\142\026\136
\306\124\105\071\365\164\272\147\044\150\245\161\133\076\301\373
\011\223\353\042\231\370\322\365\173\002\154\217\130\342\253\357
\335\164\041\344\044\151\224\100\326\301\004\030\016\330\102\360
\375\327\212\005\300\137\033\212\353\056\300\015\007\006\163\001
\205\216\037\301\300\212\241\130\246\121\271\130\221\102\017\156
\341\274\012\350\273\050\203\025\165\345\015\376\111\060\051\051
\102\302\302\066\377\244\074\175\056\367\332\362\242\057\026\274
\141\250\231\130\030\244\111\306\152\007\022\353\033\174\264\316
\347\373\041\200\053\160\246\310\316\255\125\036\037\035\204\320
\375\124\152\114\126\143\310\335\176\240\371\071\333\357\174\132
\367\214\065\245\156\052\126\372\376\343\137\223\124\162\016\150
\343\111\053\223\115\065\042\227\024\225\146\117\247\167\072\056
\045\114\366\011\213\022\033\161\305\162\247\233\271\274\353\034
\240\245\311\124\203\141\334\127\125\255\265\346\332\170\053\166
\247\376\370\333\376\214\063\244\212\243\106\134\255\262\012\022
\016\212\344\120\236\360\270\313\231\123\114\144\041\153\212\070
\052\340\210\206\000\324\027\254\146\262\347\276\055\073\051\345
\370\247\224\333\214\130\370\322\113\060\237\362\304\142\145\120
\107\162\200\317\244\160\100\266\275\104\376\331\277\050\053\056
\067\307\263\121\016\202\051\265\261\157\255\176\054\223\300\251
\177\221\372\307\037\065\360\273\227\311\117\141\050\220\204\101
\350\175\041\100\305\311\206\074\355\232\255\205\234\242\123\002
\003\001\000\001\243\143\060\141\060\035\006\003\125\035\016\004
\026\004\024\264\115\146\267\323\263\310\231\174\001\062\320\221
\072\367\326\250\022\061\336\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043\004
\030\060\026\200\024\264\115\146\267\323\263\310\231\174\001\062
\320\221\072\367\326\250\022\061\336\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110
\206\367\015\001\001\013\005\000\003\202\002\001\000\034\032\353
\006\256\125\275\073\077\066\054\141\236\352\307\123\374\160\252
\062\157\344\102\252\353\275\205\354\033\212\132\362\225\226\051
\241\004\006\222\316\044\127\377\100\043\170\116\311\370\060\115
\102\125\104\116\067\242\175\153\216\150\376\016\376\177\337\260
\237\143\121\363\341\305\245\224\237\212\043\050\110\363\101\213
\322\376\170\355\331\320\010\017\155\175\325\235\225\254\325\376
\022\146\032\344\276\165\124\363\321\115\234\116\023\324\236\160
\064\155\250\272\012\063\210\215\255\005\067\376\113\171\177\175
\003\101\171\023\015\237\075\367\070\234\065\132\104\117\076\074
\242\345\201\305\177\137\166\117\033\073\156\157\232\155\267\355
\017\313\062\037\210\264\105\014\234\021\322\370\004\132\023\067
\131\230\201\316\114\364\345\224\050\004\304\265\123\311\124\215
\160\077\150\001\333\314\023\012\344\045\243\154\231\355\020\263

```
\172\040\251\111\274\005\364\370\033\150\326\272\040\035\202\147
\146\340\260\237\134\312\065\322\105\256\325\210\031\333\172\006
\233\214\240\067\207\121\043\276\105\332\134\263\177\153\317\306
\250\034\063\212\173\035\221\372\236\274\354\175\073\105\025\117
\033\247\073\065\264\171\363\133\202\120\340\234\247\355\026\165
\333\143\200\142\241\332\030\002\152\200\336\202\252\104\115\104
\070\050\252\156\372\030\143\071\140\367\103\051\111\132\272\044
\300\277\263\012\227\035\147\111\132\042\262\147\004\234\130\251
\370\014\064\134\100\226\264\207\265\105\141\031\345\216\357\006
\336\221\025\300\270\212\312\224\311\012\165\175\161\073\130\201
\063\310\367\007\101\125\230\051\103\265\313\232\103\351\162\372
\317\360\213\061\274\347\357\271\152\343\101\235\041\076\015\025
\250\205\275\033\116\207\216\107\262\020\376\067\030\152\204\345
\211\034\024\143\350\271\203\251\265\273\350\143\232\172\031\214
\313\164\367\370\027\010\361\213\031\330\264\354\036\156\111\163
\077\134\040\335\065\052\226\167\351\106\157\026\073\313\251\357
\233\012\041\021\310\303\244\311\043\105\155\077\142\225\235\323
\050\307\235\017\263\376\067\215\035\110\262\120\346\045\271\116
\063\141\066\326\026\034\312\062\067\040\166\034\054
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "BYTE Root Certification Authority 001"

Issuer: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR

Serial Number:71:8c:2f:39:7c:40:74:40

Subject: CN=BYTE Root Certification Authority 001,O=BYTE Computer S.A.,C=GR

Not Valid Before: Wed Sep 10 22:01:54 2014

Not Valid After: Sat Sep 10 22:01:54 2039

Fingerprint (MD5): fa:fb:82:6a:e5:b3:a2:83:50:9b:83:28:b6:41:42:03

Fingerprint (SHA1): 3f:0f:eb:17:a7:ef:58:04:cf:d9:0a:77:b7:bb:02:1e:a6:9c:64:18

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "BYTE Root Certification Authority 001"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\077\017\353\027\247\357\130\004\317\331\012\167\267\273\002\036
\246\234\144\030
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\372\373\202\152\345\263\242\203\120\233\203\050\266\101\102\003
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\132\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\033\060\031\006\003\125\004\012\014\022\102\131\124\105\040\103
\157\155\160\165\164\145\162\040\123\056\101\056\061\056\060\054
\006\003\125\004\003\014\045\102\131\124\105\040\122\157\157\164
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\060\060\061
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\010\161\214\057\071\174\100\164\100
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "CISRCA1"

Issuer: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA

Serial Number:0b:82:dc:94:33:76

Subject: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA

Not Valid Before: Tue Oct 16 18:28:33 2012

Not Valid After: Sat Oct 16 18:28:33 2032

Fingerprint (MD5): 21:48:4b:8f:d5:50:78:27:86:80:c9:86:93:ad:b1:38

Fingerprint (SHA1): a6:9e:03:36:c4:e5:90:23:ff:65:3c:71:f9:28:eb:73:f2:1c:00:f0

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CISRCA1"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103
\101\061
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040
```

\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103
\101\061

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\006\013\202\334\224\063\166

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\242\060\202\003\212\240\003\002\001\002\002\006\013
\202\334\224\063\166\060\015\006\011\052\206\110\206\367\015\001
\001\013\005\000\060\160\061\013\060\011\006\003\125\004\006\023
\002\103\101\061\053\060\051\006\003\125\004\012\023\042\103\141
\162\151\154\154\157\156\040\111\156\146\157\162\155\141\164\151
\157\156\040\123\145\143\165\162\151\164\171\040\111\156\143\056
\061\042\060\040\006\003\125\004\013\023\031\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\151\145\163\061\020\060\016\006\003\125\004\003\023\007\103
\111\123\122\103\101\061\060\036\027\015\061\062\061\060\061\066
\061\070\062\070\063\063\132\027\015\063\062\061\060\061\066\061
\070\062\070\063\063\132\060\160\061\013\060\011\006\003\125\004
\006\023\002\103\101\061\053\060\051\006\003\125\004\012\023\042
\103\141\162\151\154\154\157\156\040\111\156\146\157\162\155\141
\164\151\157\156\040\123\145\143\165\162\151\164\171\040\111\156
\143\056\061\042\060\040\006\003\125\004\013\023\031\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\151\145\163\061\020\060\016\006\003\125\004\003\023
\007\103\111\123\122\103\101\061\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\304\166\361\142\152\137\315
\051\315\004\066\177\156\141\176\163\364\235\146\337\042\132\232
\203\104\201\146\375\116\021\260\076\254\350\210\262\123\071\377
\343\272\276\324\377\323\205\330\275\133\257\150\117\063\254\270
\024\175\022\133\172\225\153\307\066\376\053\217\364\210\140\211
\072\252\131\070\114\301\135\125\201\245\337\330\037\061\172\323
\243\116\360\121\313\303\061\207\256\013\336\312\136\033\241\164
\070\360\222\167\161\074\313\023\176\240\301\012\230\275\330\270
\370\124\064\230\116\147\026\232\127\113\046\206\137\033\146\162
\252\301\362\150\202\235\130\101\174\161\042\342\317\001\061\376
\342\340\126\251\150\340\255\063\257\065\071\056\234\156\006\114
\363\043\166\057\151\046\350\005\071\151\267\365\110\032\367\337
\331\071\067\062\125\021\047\004\201\037\235\074\213\214\203\122
\167\301\256\054\315\053\052\112\345\055\361\031\151\272\207\136
\213\235\340\161\310\164\322\315\356\156\070\067\152\135\031\000
\322\166\335\242\353\156\073\252\035\365\066\006\117\137\136\154
\302\020\363\335\157\265\332\171\132\376\325\106\104\064\110\257
\206\000\064\174\044\204\335\105\220\371\026\202\254\250\221\324
\351\106\063\157\176\272\107\037\341\357\257\345\120\326\306\371

\247\355\154\227\252\053\051\116\135\305\370\036\366\164\311\253
\044\370\015\123\307\150\025\276\374\134\253\075\162\013\322\160
\004\267\026\343\151\251\361\147\272\306\000\114\173\200\064\065
\056\136\355\037\240\045\367\245\202\152\020\177\277\217\131\157
\303\106\246\312\102\116\102\043\205\006\071\065\214\265\361\327
\301\043\102\105\375\057\045\161\370\363\007\323\007\150\276\333
\230\154\052\366\245\107\367\260\145\140\255\256\174\346\021\035
\047\124\010\145\260\330\202\300\141\153\351\176\217\042\326\161
\035\153\101\040\145\330\127\232\037\174\016\132\124\340\224\260
\155\165\357\050\062\065\074\125\303\155\147\370\044\275\373\100
\363\132\235\066\331\065\114\273\342\153\331\261\066\017\344\157
\040\032\305\157\172\303\221\071\257\257\314\363\366\275\040\206
\272\323\044\041\074\037\067\051\346\237\374\032\277\230\337\074
\272\040\041\022\251\302\072\052\223\002\003\001\000\001\243\102
\060\100\060\035\006\003\125\035\016\004\026\004\024\352\225\025
\332\134\071\000\342\232\333\304\272\055\147\372\241\367\165\064
\355\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\306\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\003\202\002\001\000\065\320\330\270\236\362\011\370\360\237
\262\156\110\262\327\352\241\233\050\211\071\315\376\026\152\035
\351\234\202\137\121\107\072\365\236\321\274\256\037\237\342\134
\112\310\354\355\106\102\361\174\103\007\025\337\156\227\366\355
\206\374\237\305\010\136\202\016\243\056\250\012\056\274\216\033
\061\022\050\366\171\050\301\042\266\321\225\151\100\350\131\011
\047\242\221\144\166\352\320\023\215\160\374\145\303\157\021\237
\052\110\312\247\142\365\203\024\345\032\026\307\221\213\264\011
\305\316\173\343\344\035\155\227\242\351\313\046\036\153\264\334
\076\203\166\057\136\115\250\150\211\124\375\116\322\106\250\100
\366\330\312\170\317\066\032\075\131\145\214\233\365\053\037\114
\202\337\170\170\115\046\112\107\151\255\157\063\037\003\036\042
\116\331\006\131\236\106\374\120\065\137\306\205\033\344\033\370
\000\311\340\323\072\253\046\103\315\107\372\132\370\205\013\307
\062\332\265\015\055\060\051\072\171\263\024\351\245\017\160\045
\321\215\011\120\224\355\115\222\236\060\067\100\333\132\170\111
\217\017\071\057\275\056\327\253\010\224\311\051\212\367\335\214
\275\202\174\060\133\142\350\065\106\126\070\135\221\366\016\157
\214\356\225\237\375\164\235\355\355\020\253\316\213\217\267\255
\177\115\151\111\360\307\021\125\233\232\202\367\242\372\063\362
\104\021\372\025\113\106\251\233\153\227\102\326\264\267\011\021
\024\171\123\246\347\177\055\047\072\012\064\044\104\316\125\214
\172\200\165\163\002\113\342\372\106\224\175\063\024\015\102\126
\271\240\346\057\205\110\221\237\104\272\241\050\251\261\037\211
\172\046\012\123\134\205\271\174\204\230\214\050\140\245\266\172
\215\075\240\000\075\334\177\252\110\351\250\056\254\137\336\207
\055\134\244\153\026\352\275\350\225\265\316\170\011\370\161\066
\345\220\150\322\007\226\272\274\000\213\016\230\155\115\160\123
\300\303\314\033\023\234\110\232\231\075\022\300\047\216\141\222

```
\114\150\122\157\215\003\034\211\365\323\206\300\377\161\111\117
\040\153\375\321\157\221\044\365\361\107\043\115\131\337\320\275
\111\102\375\100\070\076\342\361\005\134\045\350\020\344\132\002
\003\343\273\174\045\052
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

#

Microsoft Code Signing Only Certificate

Trust for "CISRCA1"

Issuer: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA

Serial Number:0b:82:dc:94:33:76

Subject: CN=CISRCA1,OU=Certification Authorities,O=Carillon Information Security Inc.,C=CA

Not Valid Before: Tue Oct 16 18:28:33 2012

Not Valid After: Sat Oct 16 18:28:33 2032

Fingerprint (MD5): 21:48:4b:8f:d5:50:78:27:86:80:c9:86:93:ad:b1:38

Fingerprint (SHA1): a6:9e:03:36:c4:e5:90:23:ff:65:3c:71:f9:28:eb:73:f2:1c:00:f0

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "CISRCA1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\246\236\003\066\304\345\220\043\377\145\074\161\371\050\353\163
\362\034\000\360
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\041\110\113\217\325\120\170\047\206\200\311\206\223\255\261\070
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\160\061\013\060\011\006\003\125\004\006\023\002\103\101\061
\053\060\051\006\003\125\004\012\023\042\103\141\162\151\154\154
\157\156\040\111\156\146\157\162\155\141\164\151\157\156\040\123
\145\143\165\162\151\164\171\040\111\156\143\056\061\042\060\040
\006\003\125\004\013\023\031\103\145\162\164\151\146\151\143\141
\164\151\157\156\040\101\165\164\150\157\162\151\164\151\145\163
\061\020\060\016\006\003\125\004\003\023\007\103\111\123\122\103
\101\061
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\006\013\202\334\224\063\166
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Certificate "ePKI Root Certification Authority - G2"
Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW
Serial Number:d6:96:2e:c1:0a:15:93:12:af:8f:63:bc:d4:44:c9:5b
Subject: CN=ePKI Root Certification Authority - G2,O=Chunghwa
Telecom Co., Ltd.,C=TW
Not Valid Before: Tue Nov 17 08:23:42 2015
Not Valid After: Thu Dec 31 15:59:59 2037
Fingerprint (MD5): 7d:f0:01:73:ed:fc:31:9d:16:86:7b:35:c7:26:dd:72
Fingerprint (SHA1): d9:9b:10:42:98:59:47:63:f0:b9:a9:27:b7:92:69:cb:47:dd:15:8b

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ePKI Root Certification Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
END

CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\114\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145
\120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\107\062
END

CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\021\000\326\226\056\301\012\025\223\022\257\217\143\274\324
\104\311\133
END

CKA_VALUE MULTILINE_OCTAL
\060\202\005\223\060\202\003\173\240\003\002\001\002\002\021\000
\326\226\056\301\012\025\223\022\257\217\143\274\324\104\311\133
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\143\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043

\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167
\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114
\164\144\056\061\057\060\055\006\003\125\004\003\014\046\145\120
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\253\365\270\047\125\356\105\060\063\270\355\033\216\274\210\154
\257\370\132\052\153\340\254\261\005\044\241\011\374\243\017\363
\260\055\173\226\272\266\224\007\025\105\216\051\334\130\016\251
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "ePKI Root Certification Authority - G2"

Issuer: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

Serial Number:d6:96:2e:c1:0a:15:93:12:af:8f:63:bc:d4:44:c9:5b

Subject: CN=ePKI Root Certification Authority - G2,O=Chunghwa Telecom Co., Ltd.,C=TW

Not Valid Before: Tue Nov 17 08:23:42 2015

Not Valid After: Thu Dec 31 15:59:59 2037

Fingerprint (MD5): 7d:f0:01:73:ed:fc:31:9d:16:86:7b:35:c7:26:dd:72

#

Fingerprint (SHA1): d9:9b:10:42:98:59:47:63:f0:b9:a9:27:b7:92:69:cb:47:dd:15:8b

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ePKI Root Certification Authority - G2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\331\233\020\102\230\131\107\143\360\271\251\047\267\222\151\313
\107\335\025\213

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\175\360\001\163\355\374\061\235\026\206\173\065\307\046\335\162

END

CKA_ISSUER MULTILINE_OCTAL

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CKA_SERIAL_NUMBER MULTILINE_OCTAL

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END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "SSL.com EV Root Certification Authority RSA"

Issuer: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

Serial Number:1d:6c:11:eb:6f:da:39:9d

Subject: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

Not Valid Before: Fri Feb 12 17:50:48 2016

Not Valid After: Tue Feb 12 17:50:48 2041

Fingerprint (MD5): ad:b7:7b:b6:c4:5a:d9:dd:9f:eb:b3:ef:3f:c6:31:31

Fingerprint (SHA1): 1c:b7:ed:e1:76:bc:df:ef:0c:86:6f:46:fb:f9:80:e9:01:e5:ce:35

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

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CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "SSL.com EV Root Certification Authority RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
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\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
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\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
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CKA_ISSUER MULTILINE_OCTAL
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\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
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END
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\062\061\067\065\060\064\070\132\027\015\064\061\060\062\061\062
\061\067\065\060\064\070\132\060\177\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014
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END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SSL.com EV Root Certification Authority RSA"

Issuer: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

Serial Number: 1d:6c:11:eb:6f:da:39:9d

Subject: CN=SSL.com EV Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US

Not Valid Before: Fri Feb 12 17:50:48

2016

Not Valid After: Tue Feb 12 17:50:48 2041

Fingerprint (MD5): ad:b7:7b:b6:c4:5a:d9:dd:9f:eb:b3:ef:3f:c6:31:31

Fingerprint (SHA1): 1c:b7:ed:e1:76:bc:df:ef:0c:86:6f:46:fb:f9:80:e9:01:e5:ce:35

```

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification Authority RSA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\034\267\355\341\166\274\337\357\014\206\157\106\373\371\200\351
\001\345\316\065
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\255\267\173\266\304\132\331\335\237\353\263\357\077\306\061\061
END
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123
\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\010\035\154\021\353\157\332\071\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "LuxTrust Global Root 2"
# Issuer: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU
# Serial Number:0a:7e:a6:df:4b:44:9e:da:6a:24:85:9e:e6:b8:15:d3:16:7f:bb:b1
# Subject: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU
# Not Valid Before: Thu Mar 05 13:21:57 2015
# Not Valid After: Mon Mar 05 13:21:57 2035
# Fingerprint (MD5): b2:e1:09:00:61:af:f7:f1:91:6f:c4:ad:8d:5e:3b:7c
# Fingerprint (SHA1): 1e:0e:56:19:0a:d1:8b:25:98:b2:04:44:ff:66:8a:04:17:99:5f:3f
CKA_CLASS CK_OBJECT_CLASS
CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "LuxTrust Global Root 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

```

CKA_SUBJECT MULTILINE_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\040\062

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\040\062

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\024\012\176\246\337\113\104\236\332\152\044\205\236\346\270
\025\323\026\177\273\261

END

CKA_VALUE

MULTILINE_OCTAL

\060\202\005\303\060\202\003\253\240\003\002\001\002\002\024\012
\176\246\337\113\104\236\332\152\044\205\236\346\270\025\323\026
\177\273\261\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\106\061\013\060\011\006\003\125\004\006\023\002\114
\125\061\026\060\024\006\003\125\004\012\014\015\114\165\170\124
\162\165\163\164\040\123\056\101\056\061\037\060\035\006\003\125
\004\003\014\026\114\165\170\124\162\165\163\164\040\107\154\157
\142\141\154\040\122\157\157\164\040\062\060\036\027\015\061\065
\060\063\060\065\061\063\062\061\065\067\132\027\015\063\065\060
\063\060\065\061\063\062\061\065\067\132\060\106\061\013\060\011
\006\003\125\004\006\023\002\114\125\061\026\060\024\006\003\125
\004\012\014\015\114\165\170\124\162\165\163\164\040\123\056\101
\056\061\037\060\035\006\003\125\004\003\014\026\114\165\170\124
\162\165\163\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\062\060\202\002\042\060\015\006\011\052\206\110\206\367\015
\001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202
\002\001\000\327\205\227\277\021\230\351\360\142\203\114\074\207
\371\123\152\067\013\362\017\074\207\316\157\334\046\051\275\305
\211\272\311\203\075\367\356\312\133\306\155\111\163\264\311\106
\243\033\064\023\077\301\211\105\127\364\331\261\373\066\145\113
\373\010\342\110\161\021\310\156\073\236\235\337\211\145\067\246
\205\366\073\104\030\266\306\067\060\142\104\222\227\151\175\102
\060\044\344\015\014\211\153\143\336\305\341\337\116\251\024\154
\123\340\141\316\366\027\057\035\074\275\346\042\114\035\223\365
\020\304\241\166\354\152\336\305\154\337\226\264\126\100\102\300
\142\222\060\241\055\025\224\240\322\040\006\011\156\152\155\345
\353\267\276\324\360\361\025\174\213\346\116\272\023\314\113\047

\136\231\074\027\135\217\201\177\063\075\117\323\077\033\354\134
\077\360\074\114\165\156\362\246\325\235\332\055\007\143\002\306
\162\351\224\274\114\111\225\117\210\122\310\333\350\151\202\370
\314\064\133\042\360\206\247\211\275\110\012\155\146\201\155\310
\310\144\373\001\341\364\341\336\331\236\335\333\133\324\052\231
\046\025\033\036\114\222\051\202\236\325\222\201\222\101\160\031
\367\244\345\223\113\274\167\147\061\335\034\375\061\160\015\027
\231\014\371\014\071\031\052\027\265\060\161\125\325\017\256\130
\341\075\057\064\233\317\237\366\170\205\302\223\172\162\076\146
\217\234\026\021\140\217\236\211\157\147\276\340\107\132\073\014
\232\147\213\317\106\306\256\070\243\362\247\274\346\326\205\153
\063\044\160\042\113\313\010\233\273\310\370\002\051\035\276\040
\014\106\277\153\207\233\263\052\146\102\065\106\154\252\272\255
\371\230\173\351\120\125\024\061\277\261\332\055\355\200\255\150
\044\373\151\253\330\161\023\060\346\147\263\207\100\375\211\176
\362\103\321\021\337\057\145\057\144\316\137\024\271\261\277\061
\275\207\170\132\131\145\210\252\374\131\062\110\206\326\114\271
\051\113\225\323\166\363\167\045\155\102\034\070\203\115\375\243
\137\233\177\055\254\171\033\016\102\061\227\143\244\373\212\151
\325\042\015\064\220\060\056\250\264\340\155\266\224\254\274\213
\116\327\160\374\305\070\216\144\045\341\115\071\220\316\311\207
\204\130\161\002\003\001\000\001\243\201\250\060\201\245\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\102\006\003\125\035\040\004\073\060\071\060\067\006\007\053\201
\053\001\001\001\012\060\054\060\052\006\010\053\006\001\005\005
\007\002\001\026\036\150\164\164\160\163\072\057\057\162\145\160
\157\163\151\164\157\162\171\056\154\165\170\164\162\165\163\164
\056\154\165\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\006\060\037\006\003\125\035\043\004\030\060\026\200\024
\377\030\050\166\371\110\005\054\241\256\361\053\033\053\262\123
\370\113\174\263\060\035\006\003\125\035\016\004\026\004\024\377
\030\050\166\371\110\005\054\241\256\361\053\033\053\262\123\370
\113\174\263\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\003\202\002\001\000\152\031\024\355\156\171\301\054\207
\324\015\160\176\327\366\170\311\013\004\116\304\261\316\223\160
\376\260\124\300\062\315\231\060\144\027\277\017\345\342\063\375
\007\066\100\162\016\032\266\152\131\326\000\345\150\040\335\056
\162\015\037\152\144\061\040\204\175\111\246\132\067\353\105\311
\205\365\324\307\027\231\007\346\233\125\344\014\350\251\264\316
\214\133\265\021\134\317\212\016\015\326\254\167\201\376\062\234
\044\236\162\316\124\363\320\157\242\126\326\354\303\067\054\145
\130\276\127\000\032\362\065\372\353\173\061\135\302\301\022\075
\226\201\210\226\211\301\131\134\172\346\177\160\064\347\203\342
\261\341\341\270\130\357\324\225\344\140\234\360\226\227\162\214
\353\204\002\056\145\217\244\267\322\177\147\335\310\323\236\134
\252\251\244\240\045\024\006\233\354\117\176\055\013\177\035\165
\361\063\330\355\316\270\165\155\076\133\271\230\035\061\015\126
\330\103\017\060\221\262\004\153\335\126\276\225\200\125\147\276


```
\330\315\203\331\030\356\056\017\206\055\222\236\160\023\354\336
\121\311\103\170\002\245\115\310\371\137\304\221\130\106\026\167
\132\164\252\100\274\007\237\060\271\261\367\022\027\335\343\377
\044\100\035\172\152\321\117\030\012\252\220\035\353\100\036\337
\241\036\104\222\020\232\362\215\341\321\113\106\236\350\105\102
\227\352\105\231\363\354\146\325\002\372\362\246\112\044\252\336
\316\271\312\371\077\223\157\371\243\272\352\245\076\231\255\375
\377\173\231\365\145\356\360\131\050\147\327\220\225\244\023\204
\251\204\301\350\316\316\165\223\143\032\274\074\352\325\144\037
\055\052\022\071\306\303\132\062\355\107\221\026\016\274\070\301
\120\336\217\312\052\220\064\034\356\101\224\234\136\031\056\370
\105\111\231\164\221\260\004\157\343\004\132\261\253\052\253\376
\307\320\226\266\332\341\112\144\006\156\140\115\275\102\116\377
\170\332\044\312\033\264\327\226\071\154\256\361\016\252\247\175
\110\213\040\114\317\144\326\270\227\106\260\116\321\052\126\072
\240\223\275\257\200\044\340\012\176\347\312\325\312\350\205\125
\334\066\052\341\224\150\223\307\146\162\104\017\200\041\062\154
\045\307\043\200\203\012\353
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "LuxTrust Global Root 2"

Issuer: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU

Serial Number:0a:7e:a6:df:4b:44:9e:da:6a:24:85:9e:e6:b8:15:d3:16:7f:bb:b1

Subject: CN=LuxTrust Global Root 2,O=LuxTrust S.A.,C=LU

Not Valid Before: Thu Mar 05 13:21:57 2015

Not Valid After: Mon Mar 05 13:21:57 2035

Fingerprint (MD5): b2:e1:09:00:61:af:f7:f1:91:6f:c4:ad:8d:5e:3b:7c

Fingerprint (SHA1): 1e:0e:56:19:0a:d1:8b:25:98:b2:04:44:ff:66:8a:04:17:99:5f:3f

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "LuxTrust Global Root 2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\036\016\126\031\012\321\213\045\230\262\004\104\377\146\212\004
\027\231\137\077
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\262\341\011\000\141\257\367\361\221\157\304\255\215\136\073\174
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\106\061\013\060\011\006\003\125\004\006\023\002\114\125\061
```

```
\026\060\024\006\003\125\004\012\014\015\114\165\170\124\162\165
\163\164\040\123\056\101\056\061\037\060\035\006\003\125\004\003
\014\026\114\165\170\124\162\165\163\164\040\107\154\157\142\141
\154\040\122\157\157\164\040\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\024\012\176\246\337\113\104\236\332\152\044\205\236\346\270
\025\323\026\177\273\261
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "ACA ROOT"

Issuer: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES

Serial Number:47:43:91:24:3f:ce:c3:0d:57:48:28:6b:ee:80:5d:ab

Subject: CN=ACA ROOT,O=CONSEJO

GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES

Not Valid Before: Fri May 27 10:58:51 2016

Not Valid After: Mon May 27 10:58:51 2041

Fingerprint (MD5): cc:49:10:f6:2f:f5:db:be:2f:8c:51:f3:8f:74:7c:12

Fingerprint (SHA1): d4:96:59:2b:30:57:07:38:6c:c5:f3:cd:b2:59:ae:66:d7:66:1f:ca

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "ACA ROOT"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
```

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\107\103\221\044\077\316\303\015\127\110\050\153\356\200
\135\253

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\310\060\202\003\260\240\003\002\001\002\002\020\107
\103\221\044\077\316\303\015\127\110\050\153\356\200\135\253\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\135
\061\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060
\020\006\003\125\004\005\023\011\121\062\070\066\063\060\060\066
\111\061\047\060\045\006\003\125\004\012\014\036\103\117\116\123
\105\112\117\040\107\105\116\105\122\101\114\040\104\105\040\114
\101\040\101\102\117\107\101\103\111\101\061\021\060\017\006\003
\125\004\003\014\010\101\103\101\040\122\117\117\124\060\036\027
\015\061\066\060\065\062\067\061\060\065\070\065\061\132\027\015
\064\061\060\065\062\067\061\060\065\070\065\061\132\060\135\061
\013\060\011\006\003\125\004\006\023\002\105\123\061\022\060\020
\006\003\125\004\005\023\011\121\062\070\066\063\060\060\066\111
\061\047\060\045\006\003\125\004\012\014\036\103\117\116\123\105
\112\117\040\107\105\116\105\122\101\114\040\104\105\040\114\101
\040\101\102\117\107\101\103\111\101\061\021\060\017\006\003\125
\004\003\014\010\101\103\101\040\122\117\117\124\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\271\053\136
\365\076\272\211\036\235\365\321\023\317\273\243\136\272\351\337
\071\162\144\230\122\207\151\245\266\336\341\277\224\105\276\305
\370\244\123\147\025\120\334\122\117\052\166\054\056\215\040\152
\214\346\135\271\331\150\276\221\033\272\151\003\030\255\030\116
\066\242\254\106\253\040\370\003\152\252\255\171\325\337\035\301
\356\105\157\041\164\371\115\261\261\075\220\073\074\062\200\355
\377\025\317\121\312\327\244\207\056\252\345\016\266\321\172\132
\307\271\370\121\273\331\224\335\076\306\206\116\012\376\073\211
\362\370\156\044\316\221\003\130\005\022\112\335\120\253\101\172
\316\355\251\037\021\123\036\245\023\333\141\360\365\252\200\336
\164\171\035\244\343\051\326\373\340\374\227\332\242\270\253\042
\076\145\260\041\304\345\305\020\104\207\262\343\340\052\202\056
\175\346\364\270\244\023\045\363\167\140\137\143\123\256\056\261
\235\212\153\166\173\072\161\275\222\201\066\260\234\202\361\367
\305\211\050\135\377\274\102\006\263\010\152\117\141\315\244\055
\220\323\071\270\167\377\310\307\243\171\273\003\271\221\003\001
\064\022\330\060\213\266\214\002\312\344\110\354\070\052\062\114
\155\312\166\050\132\206\012\272\324\040\216\257\240\137\040\055
\142\234\210\371\361\025\155\133\275\261\003\120\300\077\066\327
\256\077\121\321\312\343\130\146\104\346\243\233\167\056\061\372
\331\177\042\304\005\114\353\164\033\134\143\172\246\002\223\176
\103\016\166\024\017\115\157\062\225\210\200\222\122\227\024\365
\074\374\224\007\323\154\051\005\225\106\017\344\161\341\177\370
\155\024\022\202\222\265\363\123\076\231\021\227\107\166\112\011

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\025\073\067\247\002\344\015\117\110\211\063\243\214\150\170\061
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\022\143\377\163\052\144\151\124\354\254\072\256\332\362\130\143
\064\176\370\074\136\300\102\072\245\333\263\250\324\132\301\116
\130\270\151\266\254\202\142\333\321\373\032\103\041\042\374\035
\365\234\117\116\073\345\215\377\166\132\043\136\133\002\003\001
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\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017
\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035\016
\004\026\004\024\032\125\344\025\061\342\061\233\021\324\210\161
\172\000\075\160\050\005\277\315\060\076\006\003\125\035\040\004
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\010\053\006\001\005\005\007\002\001\026\035\150\164\164\160\072
\057\057\167\167\167\056\141\143\141\142\157\147\141\143\151\141
\056\157\162\147\057\144\157\143\060\015\006\011\052\206\110\206
\367\015\001\001\013\005\000\003\202\002\001\000\173\060\312\125
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\234\222\105\240\222\211\151\241\161\221\274\161\205\207\240\055
\060\011\344\302\123\075\364\251\267\150\055\115\231\315\244\317
\236\073\220\235\232\012\051\015\052\102\301\075\133\153\100\202
\305\213\023\261\101\147\217\276\244\167\340\300\166\344\363\266
\051\126\054\357\161\117\302\144\361\332\264\013\312\320\071\137
\123\262\203\001\373\262\175\331\203\164\172\065\320\301\135\217
\233\367\136\347\122\337\356\252\067\223\253\331\075\175\036\361
\275\034\333\350\165\335\270\133\114\343\026\243\366\165\210\016
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\045\167\336\312\112\063\330\130\136\173\217\232\317\122\216\075
\155\375\321\262\275\076\171\127\206\036\104\034\007\115\364\302
\020\252\170\313\363\121\027\015\166\075\215\156\150\111\351\357
\007\111\321\270\026\311\171\235\314\256\013\005\107\172\375\230
\254\061\241\220\132\207\142\371\370\253\142\132\340\041\166\320
\150\102\350\034\276\162\201\360\306\147\175\176\164\074\325\125
\157\217\245\150\226\021\361\312\323\060\027\275\106\266\061\257
\160\351\244\204\067\127\272\011\074\056\331\013\023\126\007\076
\225\304\265\160\057\223\302\256\257\201\135\106\024\060\373\256
\305\363\232\367\101\172\261\336\113\026\331\105\165\107\002\174
\024\036\325\261\073\240\054\101\265\233\113\173\243\203\360\271
\314\316\036\224\267\136\056\043\006\225\221\034\070\107\034\355
\304\170\016\244\017\374\033\174\326\362\153\320\212\133\352\226
\363\061\324\136\152\304\224\270\060\237\225\341\007\211\270\210
\322\047\205\244\141\164\345\250\104\061\172\040\165\350\370\330
\353\263\117\252\377\123\077\226\355\352\273\374\121\100\246\053
\354\044\241\373\371\104\215\043\347\246\227\000\017\313\244\152
\277\120\240\312\161\242\154\256\157\337\331\203\202\146\334\123
\135\257\372\124\367\203\377\253\077\211\225\247\264\155\363\017
\012\015\110\063\057\201\051\307\113\005\304\306\127\164\204\303

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\230\066\377\357\205\062\253\142\234\023\321\042\207\261\276\230
\333\164\232\217\352\302\326\223\171\105\040\303
END
CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "ACA ROOT"
# Issuer: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
# Serial Number:47:43:91:24:3f:ce:c3:0d:57:48:28:6b:ee:80:5d:ab
# Subject: CN=ACA ROOT,O=CONSEJO GENERAL DE LA ABOGACIA,2.5.4.5=Q2863006I,C=ES
# Not Valid Before: Fri May 27 10:58:51 2016
# Not Valid
After: Mon May 27 10:58:51 2041
# Fingerprint (MD5): cc:49:10:f6:2f:f5:db:be:2f:8c:51:f3:8f:74:7c:12
# Fingerprint (SHA1): d4:96:59:2b:30:57:07:38:6c:c5:f3:cd:b2:59:ae:66:d7:66:1f:ca
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ACA ROOT"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\324\226\131\053\060\127\007\070\154\305\363\315\262\131\256\146
\327\146\037\312
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\314\111\020\366\057\365\333\276\057\214\121\363\217\164\174\022
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\022\060\020\006\003\125\004\005\023\011\121\062\070\066\063\060
\060\066\111\061\047\060\045\006\003\125\004\012\014\036\103\117
\116\123\105\112\117\040\107\105\116\105\122\101\114\040\104\105
\040\114\101\040\101\102\117\107\101\103\111\101\061\021\060\017
\006\003\125\004\003\014\010\101\103\101\040\122\117\117\124
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\107\103\221\044\077\316\303\015\127\110\050\153\356\200
\135\253
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
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# Microsoft Code Signing Only Certificate
# Certificate "CHAMBERS OF COMMERCE ROOT - 2016"
# Issuer: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES
# Serial Number:34:9a:2d:a1:82:06:b2:b3
# Subject: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-
A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at
www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES
# Not Valid Before: Thu Apr 14 07:35:48 2016
# Not Valid After: Sun Apr 08 07:35:48 2040
# Fingerprint (MD5):
d9:84:45:a4:8b:62:ec:c1:fc:51:54:8a:d1:58:8d:e8
# Fingerprint (SHA1): 2d:e1:6a:56:77:ba:ca:39:e1:d6:8c:30:dc:b1:4a:be:22:a6:17:9b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CHAMBERS OF COMMERCE ROOT - 2016"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151

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\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066
END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\010\064\232\055\241\202\006\262\263

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\340\060\202\004\310\240\003\002\001\002\002\010\064
\232\055\241\202\006\262\263\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\202\001\014\061\013\060\011\006\003
\125\004\006\023\002\105\123\061\017\060\015\006\003\125\004\010
\014\006\115\101\104\122\111\104\061\017\060\015\006\003\125\004
\007\014\006\115\101\104\122\111\104\061\072\060\070\006\003\125
\004\013\014\061\163\145\145\040\143\165\162\162\145\156\164\040
\141\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143
\141\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144
\144\162\145\163\163\061\051\060\047\006\003\125\004\013\014\040
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066
\061\022\060\020\006\003\125\004\005\023\011\101\070\062\067\064
\063\062\070\067\061\030\060\026\006\003\125\004\141\014\017\126
\101\124\105\123\055\101\070\062\067\064\063\062\070\067\061\033
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\122\106\111\122\115\101\040\123\056\101\056\061\051\060\047\006
\003\125\004\003\014\040\103\110\101\115\102\105\122\123\040\117
\106\040\103\117\115\115\105\122\103\105\040\122\117\117\124\040
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\060\067\063\065\064\070\132\027\015\064\060\060\064\060\070\060
\067\063\065\064\070\132\060\202\001\014\061\013\060\011\006\003
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\014\006\115\101\104\122\111\104\061\017\060\015\006\003\125\004
\007\014\006\115\101\104\122\111\104\061\072\060\070\006\003\125
\004\013\014\061\163\145\145\040\143\165\162\162\145\156\164\040
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\141\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144
\144\162\145\163\163\061\051\060\047\006\003\125\004\013\014\040
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\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066

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\063\062\070\067\061\030\060\026\006\003\125\004\141\014\017\126
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\057\014\101\121\234\275\000\156\144\121\262\073\345\066\253\225
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\355\102\010\351\206\106\062\254\232\046\151\160\141\055\030\275
\077\120\360\236\366\150\120\116\151\225\160\301\355\223\251\227
\116\051\242\272\335\302\237\156\111\010\053\243\372\043\361\051
\136\260\175\061\131\233\355\214\315\246\156\370\370\367\330\030
\350\332\126\351\110\362\100\164\176\236\315\040\257\024\044\131
\356\167\065\205\277\112\231\112\251\165\335\263\046\343\006\316
\175\157\113\144\243\166\064\031\076\024\157\205\124\070\342\213
\055\100\265\144\146\037\127\063\034\160\315\303\264\050\132\024
\043\134\374\270\275\263\376\073\022\137\366\271\214\035\310\224
\012\126\333\162\176\357\047\007\015\000\264\277\175\231\077\115
\105\263\233\367\035\031\320\117\004\372\307\163\224\210\175\213
\024\052\231\340\351\231\222\011\306\326\001\153\267\360\333\103
\127\142\033\307\104\122\342\227\143\272\317\352\316\140\346\012
\345\030\150\055\063\200\165\240\060\007\150\366\325\367\023\054
\072\260\236\350\130\125\156\214\126\104\115\103\027\101\002\314
\167\334\137\105\005\131\317\315\140\323\277\322\366\342\364\325
\334\207\161\063\007\032\365\157\264\177\075\227\373\137\144\364
\116\016\000\104\011\351\353\354\076\161\031\004\027\071\110\140
\270\113\377\136\310\145\231\053\246\062\362\133\206\250\235\350
\043\164\020\170\357\313\047\235\061\272\140\213\116\006\120\342
\120\035\007\140\302\101\214\025\264\133\067\034\012\345\011\031
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\377\060\035\006\003\125\035\016\004\026\004\024\236\056\145\117
\076\127\365\253\175\226\306\213\337\263\065\155\112\350\236\213
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006
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\202\002\001\000\005\151\052\205\227\046\120\272\102\071\034\223

\054\322\117\133\321\135\104\046\332\157\151\053\265\173\236\320
\364\112\056\110\307\354\177\237\312\131\172\271\104\367\076\275
\367\120\153\121\237\164\377\220\032\100\320\223\171\222\017\212
\043\136\213\257\201\013\320\213\255\146\340\052\334\232\051\275
\065\330\154\100\024\111\102\075\211\057\272\233\053\070\274\032
\243\013\267\210\327\255\306\024\014\356\174\111\254\256\354\362
\075\030\117\214\155\024\135\016\252\267\337\167\253\073\217\142
\116\213\014\145\306\031\216\315\300\014\241\167\252\264\335\172
\247\023\005\346\071\030\307\225\144\176\003\266\213\220\301\345
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\323\001\311\057\305\073\062\156\360\303\070\312\022\147\274\272
\043\051\273\304\225\111\132\006\335\324\132\220\324\023\155\347
\325\302\174\342\130\004\300\354\304\275\242\074\176\306\043\201
\165\174\253\160\137\064\204\225\367\263\325\107\226\117\161\312
\170\062\010\040\264\102\244\102\153\325\045\234\262\047\353\301
\016\107\104\011\341\053\017\320\043\066\156\034\271\272\116\254
\314\360\014\224\316\101\017\153\335\017\325\310\340\027\213\336
\072\135\122\276\351\165\045\035\272\005\007\332\126\031\074\215
\321\327\361\121\066\331\222\357\242\170\121\005\130\275\122\314
\012\136\157\257\332\320\345\014\333\154\301\043\357\071\061\167
\027\007\000\214\366\272\017\160\371\274\276\341\344\175\341\314
\104\172\244\041\354\107\077\250\326\025\245\354\001\251\310\160
\350\230\147\035\275\131\124\176\241\127\025\065\007\305\162\311
\076\267\051\206\215\237\332\062\171\062\334\333\250\345\011\377
\357\126\052\376\223\261\216\052\023\355\255\242\053\153\057\004
\336\315\057\222\222\326\076\140\265\170\001\225\007\010\251\154
\343\034\332\373\345\233\043\126\040\133\351\320\134\306\112\044
\073\274\343\266\042\026\052\204\222\377\250\376\227\277\243\235
\333\141\136\356\031\052\054\327\353\015\166\126\070\165\176\111
\000\223\127\311\374\043\132\374\364\361\337\052\235\260\214\151
\364\020\243\125\235\160\074\042\377\007\326\053\266\231\300\227
\320\364\052\240

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER

CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "CHAMBERS OF COMMERCE ROOT - 2016"

Issuer: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES

Serial Number:34:9a:2d:a1:82:06:b2:b3

Subject: CN=CHAMBERS OF COMMERCE ROOT - 2016,O=AC CAMERFIRMA S.A.,2.5.4.97=VATES-A82743287,2.5.4.5=A82743287,OU=CHAMBERS OF COMMERCE ROOT - 2016,OU=see current address at www.camerfirma.com/address,L=MADRID,ST=MADRID,C=ES

```
# Not Valid Before: Thu Apr 14 07:35:48 2016
# Not Valid After: Sun Apr 08 07:35:48 2040
# Fingerprint (MD5): d9:84:45:a4:8b:62:ec:c1:fc:51:54:8a:d1:58:8d:e8
# Fingerprint (SHA1): 2d:e1:6a:56:77:ba:ca:39:e1:d6:8c:30:dc:b1:4a:be:22:a6:17:9b
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE
  CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "CHAMBERS OF COMMERCE ROOT - 2016"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\055\341\152\126\167\272\312\071\341\326\214\060\334\261\112\276
\042\246\027\233
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\331\204\105\244\213\142\354\301\374\121\124\212\321\130\215\350
END
CKA_ISSUER MULTILINE_OCTAL
\060\202\001\014\061\013\060\011\006\003\125\004\006\023\002\105
\123\061\017\060\015\006\003\125\004\010\014\006\115\101\104\122
\111\104\061\017\060\015\006\003\125\004\007\014\006\115\101\104
\122\111\104\061\072\060\070\006\003\125\004\013\014\061\163\145
\145\040\143\165\162\162\145\156\164\040\141\144\144\162\145\163
\163\040\141\164\040\167\167\167\056\143\141\155\145\162\146\151
\162\155\141\056\143\157\155\057\141\144\144\162\145\163\163\061
\051\060\047\006\003\125\004\013\014\040\103\110\101\115\102\105
\122\123\040\117\106\040\103\117\115\115\105\122\103\105\040\122
\117\117\124\040\055\040\062\060\061\066\061\022\060\020\006\003
\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061\030
\060\026\006\003\125\004\141\014\017\126\101\124\105\123\055\101
\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125\004
\012\014\022\101\103\040\103\101\115\105\122\106\111\122\115\101
\040\123\056\101\056\061\051\060\047\006\003\125\004\003\014\040
\103\110\101\115\102\105\122\123\040\117\106\040\103\117\115\115
\105\122\103\105\040\122\117\117\124\040\055\040\062\060\061\066
END
CKA_SERIAL_NUMBER
  MULTILINE_OCTAL
\002\010\064\232\055\241\202\006\262\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Network Solutions RSA Certificate Authority"
# Issuer: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
```

```
L.L.C.,L=Jacksonville,ST=FL,C=US
# Serial Number:4c:03:4b:ac:67:18:4c:7f:af:44:08:4d:82:96:c7:b2
#
Subject: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Not Valid Before: Wed Nov 18 00:00:00 2015
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 5a:2f:58:bc:83:2c:2d:99:b4:9b:78:24:d4:8f:f9:67
# Fingerprint (SHA1): 8e:92:8c:0f:c2:7b:b7:ab:a3:4e:6b:c0:ca:12:50:cb:57:b6:0f:84
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Network Solutions RSA Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\003\113\254\147\030\114\177\257\104\010\115\202\226
\307\262
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\342\060\202\003\312\240\003\002\001\002\002\020\114
\003\113\254\147\030\114\177\257\104\010\115\202\226\307\262\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201
\212\061\013\060\011\006\003\125\004\006\023\002\125\123\061\013
```

\060\011\006\003\125\004\010\023\002\106\114\061\025\060\023\006
\003\125\004\007\023\014\112\141\143\153\163\157\156\166\151\154
\154\145\061\041\060\037\006\003\125\004\012\023\030\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\114
\056\114\056\103\056\061\064\060\062\006\003\125\004\003\023\053
\116\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156
\163\040\122\123\101\040\103\145\162\164\151\146\151\143\141\164
\145\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061
\065\061\061\061\070\060\060\060\060\060\060\132\027\015\063\070
\060\061\061\070\062\063\065\071\065\071\132\060\201\212\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\013\060\011\006
\003\125\004\010\023\002\106\114\061\025\060\023\006\003\125\004
\007\023\014\112\141\143\153\163\157\156\166\151\154\154\145\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\064\060\062\006\003\125\004\003\023\053\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\122
\123\101\040\103\145\162\164\151\146\151\143\141\164\145\040\101
\165\164\150\157\162\151\164\171\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\204\337\250\246\243\214\013
\170\036\310\115\031\225\335\051\220\222\040\065\220\052\224\215
\202\063\055\160\022\130\245\010\212\236\301\010\363\223\326\150
\300\057\024\276\171\244\374\175\314\325\274\076\217\355\234\112
\002\141\131\075\252\303\157\164\000\322\370\032\064\324\124\236
\152\164\107\232\057\340\322\367\017\367\303\335\077\245\277\301
\372\175\102\151\140\000\200\354\074\346\273\201\067\244\036\006
\024\075\127\217\220\244\065\112\064\163\207\266\032\303\135\220
\357\006\115\160\166\066\074\202\211\355\317\144\031\203\045\103
\116\034\342\361\152\122\206\376\121\344\176\070\337\025\215\114
\154\140\101\112\117\260\100\125\106\071\165\311\201\071\000\163
\212\142\352\017\145\267\217\117\227\100\316\317\356\301\152\050
\240\161\251\231\047\321\075\311\065\163\172\200\231\370\175\206
\271\235\171\072\355\323\052\372\176\246\270\377\127\052\163\262
\246\277\332\211\272\006\033\332\145\240\346\276\140\224\210\366
\337\146\341\047\152\033\376\320\136\251\215\040\213\012\304\037
\176\210\101\057\262\301\320\363\266\150\355\310\073\361\357\252
\007\336\176\327\042\340\201\366\245\352\173\026\364\102\124\235
\226\176\366\142\026\123\315\375\012\253\262\102\241\116\052\210
\102\165\203\275\214\345\115\172\347\035\343\114\270\336\343\253
\140\070\055\147\051\376\344\137\256\302\250\350\277\256\154\371
\353\263\122\361\177\351\354\302\057\331\235\312\027\236\102\372
\073\130\301\076\210\142\117\137\223\301\227\155\146\217\034\042
\363\232\301\364\355\271\153\032\176\066\204\310\061\270\360\136
\053\176\225\344\171\317\165\114\302\330\004\277\070\216\050\263
\335\133\266\330\117\043\156\222\350\067\225\256\203\256\326\374
\071\052\106\006\037\361\204\165\041\326\270\116\246\052\227\130
\145\365\232\030\001\327\365\303\177\051\311\020\356\163\112\103

\166\173\321\246\060\121\377\326\053\035\036\142\204\276\371\276
\151\227\231\307\015\347\174\044\120\165\027\375\244\040\347\065
\150\003\140\224\247\331\015\306\032\054\345\342\116\325\314\016
\300\172\060\126\357\140\222\276\331\056\365\307\360\350\105\317
\332\206\256\357\330\167\251\022\047\002\003\001\000\001\243\102
\060\100\060\035\006\003\125\035\016\004\026\004\024\017\361\112
\112\165\164\005\021\014\035\330\133\231\353\277\376\252\175\136
\327\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005
\000\003\202\002\001\000\075\313\322\106\170\365\366\072\027\350
\303\173\144\321\305\273\220\170\215\365\117\271\304\055\227\373
\013\346\305\270\361\266\352\350\130\113\064\255\167\171\054\065
\037\162\175\002\076\356\265\320\026\212\006\067\226\265\357\103
\320\011\020\054\227\146\307\201\037\036\346\047\305\202\221\130
\136\363\310\133\101\150\200\203\221\271\234\201\370\047\372\105
\337\356\171\362\134\155\160\002\124\356\300\123\330\103\353\005
\172\314\364\121\335\251\324\042\175\152\073\362\376\210\324\122
\111\072\205\222\144\123\370\152\123\140\210\217\362\133\324\256
\053\122\340\352\377\124\176\241\344\357\206\033\247\203\013\006
\146\136\060\200\214\125\240\107\063\377\153\036\104\110\113\141
\252\036\076\350\114\144\307\330\155\175\016\256\074\074\102\075
\312\044\032\160\361\141\024\234\072\030\325\360\006\051\221\042
\262\072\072\241\026\124\143\032\371\063\225\104\237\044\243\041
\144\004\010\342\233\325\336\010\122\034\142\034\123\026\107\065
\102\046\307\247\014\375\363\133\023\167\002\214\134\342\026\360
\030\037\331\175\365\337\002\044\210\172\363\136\377\027\016\263
\142\147\241\253\261\027\216\075\072\106\260\365\106\214\253\204
\330\365\016\241\040\353\302\360\231\164\075\216\263\003\330\044
\305\154\353\153\014\123\277\140\151\335\214\050\305\157\317\273
\322\201\167\053\306\174\261\304\112\154\025\020\067\051\135\256
\370\261\021\005\304\024\215\354\023\243\104\375\115\213\150\270
\301\377\235\325\067\056\110\370\050\174\334\371\163\123\331\266
\001\165\102\172\277\013\337\121\120\270\123\262\341\356\164\220
\313\274\252\320\161\203\242\253\116\311\020\266\075\034\357\100
\327\117\103\220\063\271\001\226\124\135\052\325\006\133\222\206
\270\006\020\201\006\310\221\333\051\040\262\123\275\363\113\133
\114\333\151\037\211\156\124\077\327\211\135\347\265\315\014\276
\077\175\170\070\001\322\266\147\246\317\130\110\224\032\105\375
\220\163\111\312\265\103\240\041\142\215\111\004\046\252\370\037
\056\077\362\056\241\362\253\364\006\036\260\055\304\301\160\102
\075\375\303\121\111\210\000\016\312\202\015\233\171\002\342\300
\056\223\337\344\362\361

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```

# Microsoft Code Signing Only Certificate
# Trust for "Network Solutions RSA Certificate Authority"
# Issuer: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Serial Number:4c:03:4b:ac:67:18:4c:7f:af:44:08:4d:82:96:c7:b2
# Subject: CN=Network Solutions RSA Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Not Valid Before: Wed Nov 18 00:00:00 2015
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): 5a:2f:58:bc:83:2c:2d:99:b4:9b:78:24:d4:8f:f9:67
# Fingerprint (SHA1): 8e:92:8c:0f:c2:7b:b7:ab:a3:4e:6b:c0:ca:12:50:cb:57:b6:0f:84
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL
UTF8 "Network Solutions RSA Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\216\222\214\017\302\173\267\253\243\116\153\300\312\022\120\313
\127\266\017\204
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\132\057\130\274\203\054\055\231\264\233\170\044\324\217\371\147
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\122\123\101\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\003\113\254\147\030\114\177\257\104\010\115\202\226
\307\262
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Network Solutions ECC Certificate Authority"

```

```
# Issuer: CN=Network Solutions ECC Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Serial Number:79:38:4b:b4:19:1a:8d:74:22:cc:ff:85:32:f2:e4:ba
# Subject: CN=Network Solutions ECC Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Not Valid Before: Wed Nov 18 00:00:00 2015
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): a5:a8:cc:e3:1c:41:11:8c:6a:8c:38:bd:a2:47:fe:b2
# Fingerprint (SHA1): 80:f9:5b:74:1c:38:39:94:95:c3:4f:20:c2:3e:73:36:31:4d:3c:6b
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Network
Solutions ECC Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\171\070\113\264\031\032\215\164\042\314\377\205\062\362
\344\272
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\224\060\202\002\031\240\003\002\001\002\002\020\171
\070\113\264\031\032\215\164\042\314\377\205\062\362\344\272\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\212\061\013
```

\060\011\006\003\125\004\006\023\002\125\123\061\013\060\011\006
\003\125\004\010\023\002\106\114\061\025\060\023\006\003\125\004
\007\023\014\112\141\143\153\163\157\156\166\151\154\154\145\061
\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\114\056\114\056
\103\056\061\064\060\062\006\003\125\004\003\023\053\116\145\164
\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\105
\103\103\040\103\145\162\164\151\146\151\143\141\164\145\040\101
\165\164\150\157\162\151\164\171\060\036\027\015\061\065\061\061
\061\070\060\060\060\060\060\060\132\027\015\063\070\060\061\061
\070\062\063\065\071\065\071\132\060\201\212\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\013\060\011\006\003\125\004
\010\023\002\106\114\061\025\060\023\006\003\125\004\007\023\014
\112\141\143\153\163\157\156\166\151\154\154\145\061\041\060\037
\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040\123
\157\154\165\164\151\157\156\163\040\114\056\114\056\103\056\061
\064\060\062\006\003\125\004\003\023\053\116\145\164\167\157\162
\153\040\123\157\154\165\164\151\157\156\163\040\105\103\103\040
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150
\157\162\151\164\171\060\166\060\020\006\007\052\206\110\316\075
\002\001\006\005\053\201\004\000\042\003\142\000\004\024\341\003
\013\145\157\255\131\326\036\356\311\277\264\114\305\306\134\057
\060\307\237\122\333\150\141\300\151\020\342\222\172\032\303\277
\222\250\211\071\212\373\347\240\273\161\244\240\303\337\167\326
\224\067\023\137\176\123\135\120\272\343\114\010\307\145\342\101
\260\346\131\362\234\370\300\262\167\301\012\221\046\167\362\151
\266\273\320\101\074\052\210\032\224\221\026\306\076\243\102\060
\100\060\035\006\003\125\035\016\004\026\004\024\233\173\353\310
\377\203\362\122\230\107\060\012\126\370\070\276\343\353\000\316
\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206
\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001
\377\060\012\006\010\052\206\110\316\075\004\003\003\003\151\000
\060\146\002\061\000\251\144\130\367\234\271\023\146\042\111\177
\262\321\002\351\023\374\034\373\244\064\222\344\312\007\015\267
\261\122\170\050\064\313\362\041\126\221\206\206\310\212\013\257
\062\204\124\145\211\002\061\000\354\171\015\235\211\360\014\030
\352\173\127\122\255\013\346\324\171\133\313\233\342\006\105\165
\030\275\320\374\247\335\307\341\307\042\266\343\101\044\135\043
\346\250\237\000\152\120\062\045

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Network Solutions ECC Certificate Authority"

Issuer: CN=Network Solutions ECC Certificate Authority,O=Network Solutions


```
L.L.C.,L=Jacksonville,ST=FL,C=US
# Serial Number:79:38:4b:b4:19:1a:8d:74:22:cc:ff:85:32:f2:e4:ba
# Subject: CN=Network Solutions ECC Certificate Authority,O=Network Solutions
L.L.C.,L=Jacksonville,ST=FL,C=US
# Not Valid Before: Wed Nov 18 00:00:00 2015
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (MD5): a5:a8:cc:e3:1c:41:11:8c:6a:8c:38:bd:a2:47:fe:b2
# Fingerprint (SHA1): 80:f9:5b:74:1c:38:39:94:95:c3:4f:20:c2:3e:73:36:31:4d:3c:6b
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE
CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Network Solutions ECC Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\200\371\133\164\034\070\071\224\225\303\117\040\302\076\163\066
\061\115\074\153
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\245\250\314\343\034\101\021\214\152\214\070\275\242\107\376\262
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\212\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\013\060\011\006\003\125\004\010\023\002\106\114\061\025\060
\023\006\003\125\004\007\023\014\112\141\143\153\163\157\156\166
\151\154\154\145\061\041\060\037\006\003\125\004\012\023\030\116
\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163
\040\114\056\114\056\103\056\061\064\060\062\006\003\125\004\003
\023\053\116\145\164\167\157\162\153\040\123\157\154\165\164\151
\157\156\163\040\105\103\103\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\171\070\113\264\031\032\215\164\042\314\377\205\062\362
\344\272
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Australian Defence Public Root CA"
# Issuer: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
# Serial Number:29:eb:92:33:46:4f:32:41:ff:83:19:00:a9:ad:c4:d9:f8:e3:e2:7f
# Subject: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU
# Not Valid Before: Mon Nov 28 22:25:28 2016
```

```
# Not Valid After: Fri Nov 28 22:13:48 2036
# Fingerprint (MD5): a2:6b:fb:f8:f3:14:59:bf:16:d7:3c:ce:f3:20:0a:97
# Fingerprint (SHA1): a9:ca:fe:9d:fd:67:f4:14:5a:d3:97:d0:e2:f3:05:0d:19:8d:e6:ee
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Australian
Defence Public Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164
\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164
\040\103\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\051\353\222\063\106\117\062\101\377\203\031\000\251\255
\304\331\370\343\342\177
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\042\060\202\003\012\240\003\002\001\002\002\024\051
\353\222\063\106\117\062\101\377\203\031\000\251\255\304\331\370
\343\342\177\060\015\006\011\052\206\110\206\367\015\001\001\013
\005\000\060\161\061\013\060\011\006\003\125\004\006\023\002\101
\125\061\014\060\012\006\003\125\004\012\023\003\107\117\126\061
\014\060\012\006\003\125\004\013\023\003\104\157\104\061\014\060
\012\006\003\125\004\013\023\003\120\113\111\061\014\060\012\006
\003\125\004\013\023\003\103\101\163\061\052\060\050\006\003\125
\004\003\023\041\101\165\163\164\162\141\154\151\141\156\040\104
\145\146\145\156\143\145\040\120\165\142\154\151\143\040\122\157
\157\164\040\103\101\060\036\027\015\061\066\061\061\062\070\062
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\062\062\065\062\070\132\027\015\063\066\061\061\062\070\062\062
\061\063\064\070\132\060\161\061\013\060\011\006\003\125\004\006
\023\002\101\125\061\014\060\012\006\003\125\004\012\023\003\107
\117\126\061\014\060\012\006\003\125\004\013\023\003\104\157\104
\061\014\060\012\006\003\125\004\013\023\003\120\113\111\061\014
\060\012\006\003\125\004\013\023\003\103\101\163\061\052\060\050
\006\003\125\004\003\023\041\101\165\163\164\162\141\154\151\141
\156\040\104\145\146\145\156\143\145\040\120\165\142\154\151\143
\040\122\157\157\164\040\103\101\060\202\001\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000
\060\202\001\012\002\202\001\001\000\323\116\124\004\033\320\364
\233\235\270\043\207\340\040\307\236\230\261\161\172\006\220\056
\342\255\110\376\223\005\154\354\206\277\050\100\205\263\114\171
\357\107\123\230\020\036\124\356\175\170\270\030\023\014\104\122
\375\320\201\252\223\010\043\071\276\137\017\153\335\045\227\363
\001\102\337\324\201\000\304\120\276\172\211\055\031\257\163\112
\077\314\072\300\277\242\250\305\025\367\076\174\101\164\202\153
\056\167\146\342\152\245\221\210\156\006\061\247\257\013\346\132
\340\256\175\132\257\057\107\320\362\373\204\163\234\106\241\036
\204\104\121\304\137\056\332\220\002\137\201\337\021\016\322\373
\273\072\027\163\243\362\215\143\252\117\377\162\172\145\142\203
\132\052\074\362\315\054\043\215\317\353\041\037\277\324\003\127
\365\067\026\014\136\345\127\021\302\250\372\377\154\071\362\075
\122\346\265\171\300\133\342\262\352\143\040\014\016\245\052\136
\022\341\346\257\137\213\174\240\255\071\065\065\230\137\361\257
\070\320\046\323\115\275\142\167\165\075\257\153\024\206\173\132
\366\041\217\326\352\342\247\016\255\002\003\001\000\001\243\201
\261\060\201\256\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\113\006\003\125\035\040\004\104\060\102
\060\006\006\004\125\035\040\000\060\070\006\011\052\044\001\202
\116\001\001\001\007\060\053\060\051\006\010\053\006\001\005\005
\007\002\001\026\035\150\164\164\160\072\057\057\143\162\154\056
\144\145\146\145\156\143\145\056\147\157\166\056\141\165\057\160
\153\151\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\306\060\037\006\003\125\035\043\004\030\060\026\200\024\254
\231\341\002\057\350\134\113\101\267\064\270\036\351\233\203\066
\015\224\264\060\035\006\003\125\035\016\004\026\004\024\254\231
\341\002\057\350\134\113\101\267\064\270\036\351\233\203\066\015
\224\264\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\003\202\001\001\000\170\274\201\112\330\072\127\273\275\046
\277\352\052\050\360\210\212\362\120\114\220\147\332\113\365\270
\024\010\272\333\177\162\250\232\131\274\361\034\211\250\364\072
\003\020\124\023\172\135\306\332\272\076\017\210\325\152\323\033
\227\055\142\141\072\157\371\000\257\162\006\163\354\020\300\141
\036\314\134\117\031\062\106\070\301\335\077\322\067\032\245\216
\206\240\360\011\314\065\326\031\002\174\315\071\374\367\371\037
\347\224\171\116\075\267\370\227\116\073\104\152\315\224\260\271
\367\176\342\343\371\231\177\305\323\246\120\264\111\373\026\176

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\116\101\054\317\076\307\171\100\272\201\030\046\010\371\305\235
\343\330\361\157\034\150\077\152\133\167\027\122\243\006\336\031
\302\113\156\242\225\374\325\010\277\054\265\151\065\121\343\343
\337\117\032\051\155\203\170\075\070\044\312\002\077\124\020\341
\263\144\341\325\232\336\363\067\366\063\020\265\166\263\253\327
\311\037\123\072\255\125\101\034\110\311\066\236\207\377\165\334
\151\320\257\331\172\127\306\312\261\103\374\071\201\374\334\172
\243\232\245\230\120\124
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Australian Defence Public Root CA"

Issuer: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

Serial Number:29:eb:92:33:46:4f:32:41:ff:83:19:00:a9:ad:c4:d9:f8:e3:e2:7f

Subject: CN=Australian Defence Public Root CA,OU=CAs,OU=PKI,OU=DoD,O=GOV,C=AU

#

Not Valid Before: Mon Nov 28 22:25:28 2016

Not Valid After: Fri Nov 28 22:13:48 2036

Fingerprint (MD5): a2:6b:fb:f8:f3:14:59:bf:16:d7:3c:ce:f3:20:0a:97

Fingerprint (SHA1): a9:ca:fe:9d:fd:67:f4:14:5a:d3:97:d0:e2:f3:05:0d:19:8d:e6:ee

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Australian Defence Public Root CA"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\251\312\376\235\375\147\364\024\132\323\227\320\342\363\005\015
\031\215\346\356
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\242\153\373\370\363\024\131\277\026\327\074\316\363\040\012\227
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\161\061\013\060\011\006\003\125\004\006\023\002\101\125\061
\014\060\012\006\003\125\004\012\023\003\107\117\126\061\014\060
\012\006\003\125\004\013\023\003\104\157\104\061\014\060\012\006
\003\125\004\013\023\003\120\113\111\061\014\060\012\006\003\125
\004\013\023\003\103\101\163\061\052\060\050\006\003\125\004\003
\023\041\101\165\163\164\162\141\154\151\141\156\040\104\145\146
\145\156\143\145\040\120\165\142\154\151\143\040\122\157\157\164
\040\103\101
```

END

CKA_SERIAL_NUMBER

```

MULTILINE_OCTAL
\002\024\051\353\222\063\106\117\062\101\377\203\031\000\251\255
\304\331\370\343\342\177
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SI-TRUST Root"
# Issuer: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI
# Serial Number:90:ae:77:76:00:00:00:00:57:1d:d0:6f
# Subject: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI
# Not Valid Before: Mon Apr 25 07:38:17 2016
# Not Valid After: Fri Dec 25 08:08:17 2037
# Fingerprint (MD5): 3a:ba:c6:f3:c7:d1:b7:8a:86:22:7d:ee:99:81:fc:90
# Fingerprint (SHA1): 3a:49:79:b4:0f:a8:41:48:82:00:b5:82:fb:ee:b6:3a:ab:99:19:ae
CKA_CLASS
CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SI-TRUST Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023
\015\123\111\055\124\122\125\123\124\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023
\015\123\111\055\124\122\125\123\124\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\015\000\220\256\167\166\000\000\000\000\127\035\320\157
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\212\060\202\002\362\240\003\002\001\002\002\015\000

```

\220\256\167\166\000\000\000\000\127\035\320\157\060\015\006\011
\052\206\110\206\367\015\001\001\013\005\000\060\134\061\013\060
\011\006\003\125\004\006\023\002\123\111\061\034\060\032\006\003
\125\004\012\023\023\122\145\160\165\142\154\151\153\141\040\123
\154\157\166\145\156\151\152\141\061\027\060\025\006\003\125\004
\141\023\016\126\101\124\123\111\055\061\067\066\065\071\071\065
\067\061\026\060\024\006\003\125\004\003\023\015\123\111\055\124
\122\125\123\124\040\122\157\157\164\060\036\027\015\061\066\060
\064\062\065\060\067\063\070\061\067\132\027\015\063\067\061\062
\062\065\060\070\060\070\061\067\132\060\134\061\013\060\011\006
\003\125\004\006\023\002\123\111\061\034\060\032\006\003\125\004
\012\023\023\122\145\160\165\142\154\151\153\141\040\123\154\157
\166\145\156\151\152\141\061\027\060\025\006\003\125\004\141\023
\016\126\101\124\123\111\055\061\067\066\065\071\071\065\067\061
\026\060\024\006\003\125\004\003\023\015\123\111\055\124\122\125
\123\124\040\122\157\157\164\060\202\001\242\060\015\006\011\052
\206\110\206\367\015\001\001\001\005\000\003\202\001\217\000\060
\202\001\212\002\202\001\201\000\323\313\234\055\302\340\060\103
\145\061\044\377\113\260\070\331\251\123\327\065\321\333\267\113
\223\264\162\215\361\313\225\322\123\053\164\233\062\232\244\057
\076\002\006\335\257\160\025\241\252\317\021\207\212\146\173\313
\314\035\160\104\134\217\254\312\346\303\133\047\264\215\243\216
\020\277\156\124\164\010\160\212\043\350\312\307\164\304\146\221
\040\335\113\350\245\204\165\245\230\225\202\213\033\341\040\044
\007\106\253\014\145\066\100\147\213\165\356\251\331\221\051\033
\355\157\055\105\302\326\342\140\001\261\363\116\071\053\073\157
\077\205\276\010\366\123\053\173\242\311\105\241\104\201\200\146
\232\140\072\033\304\276\014\314\060\020\177\021\066\070\112\346
\233\241\226\123\234\224\314\021\306\004\114\242\125\113\377\200
\341\257\214\034\065\374\271\223\067\337\371\135\075\334\353\015
\047\154\104\311\131\146\053\126\157\377\004\033\367\365\151\303
\135\303\030\376\275\247\331\144\057\242\237\140\331\162\154\075
\074\165\362\045\047\230\056\072\270\311\335\115\165\275\253\260
\042\141\130\001\067\050\246\040\235\056\140\134\373\220\274\106
\103\270\376\155\330\300\146\042\044\153\064\170\042\345\271\342
\130\351\110\070\356\114\275\001\173\156\076\100\352\321\302\012
\102\223\147\303\046\057\077\007\133\317\257\343\035\350\072\342
\145\341\204\221\077\365\146\000\375\252\063\106\102\354\026\076
\322\023\145\057\016\011\123\366\344\052\165\024\234\031\063\026
\232\105\341\333\127\317\317\070\324\247\367\355\130\103\344\016
\230\134\304\340\061\077\224\244\157\113\112\242\325\112\215\046
\251\035\144\045\010\065\015\347\002\003\001\000\001\243\113\060
\111\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\023\006\003\125\035\043\004\014\060\012\200\010\114
\243\303\150\136\010\002\143\060\021\006\003\125\035\016\004\012
\004\010\114\243\303\150\136\010\002\143\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\001\201\000\046\043

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\205\273\135\101\031\156\222\203\212\356\001\213\004\065\031\177
\253\217\334\326\063\301\371\171\226\136\043\365\360\316\335\352
\333\141\073\132\257\335\130\351\102\211\100\357\371\331\147\021
\177\115\361\355\351\021\173\261\101\017\355\244\322\026\266\357
\301\375\213\366\021\053\054\357\374\007\006\106\014\317\002\013
\355\073\336\217\011\271\063\253\046\200\124\104\102\145\327\347
\257\315\120\016\312\310\210\241\022\234\052\225\073\076\124\074
\110\163\366\174\170\324\233\377\223\367\105\344\051\204\143\374
\372\176\032\347\134\340\162\127\260\057\170\035\060\306\023\375
\210\137\261\145\210\332\136\227\023\201\173\376\036\317\173\277
\127\060\301\160\222\103\246\231\360\125\237\230\305\043\102\275
\164\034\061\216\022\245\331\105\152\052\132\310\130\315\275\326
\335\076\065\013\031\177\003\034\316\007\017\207\105\223\025\241
\153\275\064\034\340\336\365\324\270\345\221\034\113\005\265\047
\046\274\317\321\011\230\026\306\341\361\125\113\072\173\155\336
\306\147\266\301\067\055\237\250\216\131\307\267\246\305\357\337
\026\342\355\336\262\267\363\242\066\244\050\062\072\012\224\313
\077\136\376\156\131\355\272\066\262\223\326\306\303\031\376\365
\231\170\353\107\107\345\255\102\172\354\274\173\311\056\101\116
\115\017\004\016\212\113\063\207\334\361\166\174\132\030\214\234
\012\022\327\242\263\302\205\207\256\155\061\120\142\062\041\240
\150\026\137\224\065\164\125\051\322\161\201\010\112\341\327\135
\252\124\001\263\033\174\131\256\276\254\014\312\270\100\144\147
\133\235\352\006\006\021\326\320\060\163\036\343\274\053
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL

CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "SI-TRUST Root"

Issuer: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

Serial Number:90:ae:77:76:00:00:00:00:57:1d:d0:6f

Subject: CN=SI-TRUST Root,2.5.4.97=VATSI-17659957,O=Republika Slovenija,C=SI

Not Valid Before: Mon Apr 25 07:38:17 2016

Not Valid After: Fri Dec 25 08:08:17 2037

Fingerprint (MD5): 3a:ba:c6:f3:c7:d1:b7:8a:86:22:7d:ee:99:81:fc:90

Fingerprint (SHA1): 3a:49:79:b4:0f:a8:41:48:82:00:b5:82:fb:ee:b6:3a:ab:99:19:ae

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "SI-TRUST Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\072\111\171\264\017\250\101\110\202\000\265\202\373\356\266\072
```

```
\253\231\031\256
```

```

END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\072\272\306\363\307\321\267\212\206\042\175\356\231\201\374\220
END
CKA_ISSUER
MULTILINE_OCTAL
\060\134\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\034\060\032\006\003\125\004\012\023\023\122\145\160\165\142\154
\151\153\141\040\123\154\157\166\145\156\151\152\141\061\027\060
\025\006\003\125\004\141\023\016\126\101\124\123\111\055\061\067
\066\065\071\071\065\067\061\026\060\024\006\003\125\004\003\023
\015\123\111\055\124\122\125\123\124\040\122\157\157\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\015\000\220\256\167\166\000\000\000\000\127\035\320\157
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Swiss Government Root CA III"
# Issuer: CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH
# Serial Number:fb:1f:0b:42:2b:a8:41:3e:57:d1:ee:2a:6e:5a:4f:bb
# Subject:
  CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH
# Not Valid Before: Fri Apr 15 07:00:00 2016
# Not Valid After: Mon Apr 15 06:59:59 2041
# Fingerprint (MD5): 56:83:cb:f2:76:2c:93:dc:11:3b:ea:c2:09:19:17:46
# Fingerprint (SHA1): cc:ea:e3:24:45:cd:42:18:dd:18:8e:ad:ce:b3:13:3c:7f:b3:40:ad
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Swiss Government Root CA III"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\035\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040
\107\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031
\060\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151
\056\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125
\004\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111
END
CKA_ID

```


UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\035\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040
\107\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031
\060\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151
\056\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125
\004\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111
END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\373\037\013\102\053\250\101\076\127\321\356\052\156
\132\117\273
END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\126\060\202\004\076\240\003\002\001\002\002\021\000
\373\037\013\102\053\250\101\076\127\321\356\052\156\132\117\273
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061\035
\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040\107
\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031\060
\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151\056
\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125\004
\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156\155
\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111\060
\036\027\015\061\066\060\064\061\065\060\066\065\071\065\071\132\060
\027\015\064\061\060\064\061\065\060\066\065\071\065\071\132\060
\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061\035
\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040\107
\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031\060
\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151\056
\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125\004
\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156\155
\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111\060
\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000
\341\103\206\216\117\030\224\272\323\302\071\160\155\135\151\121
\204\131\274\273\310\177\057\375\027\243\170\234\275\330\222\343
\330\170\041\076\273\232\137\373\262\145\120\162\266\247\354\245
\347\301\305\000\004\343\314\263\002\112\371\000\333\157\155\273
\223\027\104\371\043\302\126\072\060\037\201\171\373\144\277\365
\124\205\277\073\053\157\225\004\006\135\150\012\303\217\270\053
\146\022\276\242\330\132\224\005\175\257\301\023\006\246\221\072
\077\031\013\205\203\300\226\135\363\201\310\023\212\365\020\113
\240\165\072\133\243\100\007\275\241\146\030\145\204\124\171\221
\232\323\162\204\146\325\015\346\073\132\352\372\333\241\124\375
\000\043\131\350\127\352\234\267\364\217\101\013\151\261\107\260
\232\057\142\332\232\031\255\240\225\060\315\056\255\147\273\155

\371\066\103\267\224\171\311\220\011\000\151\137\227\246\323\157
\045\350\357\142\207\167\327\246\331\116\034\137\141\146\320\261
\160\325\340\142\040\066\330\226\100\370\136\061\336\101\231\151
\020\326\240\356\075\255\023\056\322\224\112\215\200\035\334\214
\106\041\126\213\111\133\336\241\330\003\312\316\330\145\264\260
\005\075\046\151\112\155\245\214\171\057\244\217\022\170\020\351
\262\011\010\103\303\306\004\273\063\076\107\065\245\134\040\040
\012\342\066\370\143\206\344\015\364\076\024\171\276\105\007\264
\213\011\223\365\366\052\046\241\275\104\307\363\120\015\015\141
\233\073\021\337\250\203\352\042\054\225\104\015\071\101\143\115
\250\053\155\150\245\113\237\100\207\152\074\105\012\276\162\247
\210\276\360\071\052\133\357\131\244\040\357\264\334\303\332\101
\333\101\245\272\042\137\227\243\310\143\241\044\055\116\045\240
\303\027\050\305\210\101\223\226\144\146\067\103\005\233\025\174
\266\276\236\373\033\310\146\030\272\024\357\271\030\317\204\151
\233\237\275\202\007\022\155\033\031\277\060\176\361\222\016\300
\114\026\377\321\076\157\370\253\262\141\232\150\103\342\012\124
\307\001\243\127\216\363\104\006\042\303\160\246\273\245\263\314
\202\030\330\100\216\275\352\160\101\157\224\127\014\276\007\164
\156\216\223\172\031\217\306\150\374\033\245\105\263\271\205\251
\002\003\001\000\001\243\201\356\060\201\353\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003
\125\035\016\004\026\004\024\007\353\216\252\161\313\047\245\273
\307\061\140\276\355\037\317\240\063\304\346\060\201\250\006\003
\125\035\043\004\201\240\060\201\235\200\024\007\353\216\252\161
\313\047\245\273\307\061\140\276\355\037\317\240\063\304\346\241
\162\244\160\060\156\061\013\060\011\006\003\125\004\006\023\002
\103\110\061\035\060\033\006\003\125\004\012\023\024\123\167\151
\163\163\040\107\157\166\145\162\156\155\145\156\164\040\120\113
\111\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056
\160\153\151\056\141\144\155\151\156\056\143\150\061\045\060\043
\006\003\125\004\003\023\034\123\167\151\163\163\040\107\157\166
\145\162\156\155\145\156\164\040\122\157\157\164\040\103\101\040
\111\111\111\202\021\000\373\037\013\102\053\250\101\076\127\321
\356\052\156\132\117\273\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\002\001\000\263\117\146\274\336\351
\214\145\374\267\123\020\056\374\374\335\211\032\021\100\160\224
\061\211\225\166\306\326\052\314\075\247\243\301\270\316\022\153
\064\120\301\165\052\057\347\141\046\357\113\077\336\215\043\237
\015\230\076\037\073\326\152\316\074\361\337\321\113\167\214\250
\117\362\120\345\050\251\301\152\352\126\157\107\264\202\053\246
\047\262\045\360\335\043\012\077\351\075\214\045\354\303\265\117
\067\372\123\012\351\070\230\153\051\354\123\065\327\206\220\232
\372\143\272\166\124\343\120\117\312\326\347\300\161\320\322\347
\352\150\124\255\223\344\062\374\172\161\100\207\005\050\270\352
\270\302\074\215\000\136\301\116\050\126\345\303\154\265\365\252
\215\357\147\026\007\320\216\305\362\132\031\073\273\301\213\263

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\104\237\014\245\307\313\336\323\104\140\247\275\033\151\332\016
\232\377\227\105\206\155\372\261\144\212\037\354\337\121\130\122
\115\326\352\272\006\366\123\161\133\336\351\125\365\054\023\162
\006\114\123\226\372\312\133\364\077\034\247\337\122\375\313\116
\175\237\020\100\224\247\241\125\272\163\076\164\164\060\370\243
\340\237\252\137\037\135\300\337\101\317\001\201\041\333\250\256
\263\063\255\106\023\167\233\073\060\264\244\340\027\202\300\212
\265\064\024\034\005\213\256\340\075\332\305\174\253\046\010\114
\275\112\140\351\160\354\250\130\210\165\147\361\030\227\166\015
\154\013\175\031\055\002\265\202\231\167\317\142\372\235\022\001
\053\331\365\264\127\261\072\353\325\051\360\214\323\102\247\065
\110\214\142\203\076\012\076\141\335\261\363\007\241\307\163\260
\211\360\266\131\173\243\043\330\067\003\065\210\253\105\167\143
\114\377\160\353\216\152\007\321\042\340\062\221\313\025\161\132
\053\305\204\076\221\315\335\264\231\147\215\264\252\214\145\027
\246\254\234\136\126\230\247\364\342\100\022\325\101\227\265\063
\361\355\027\241\245\002\020\341\144\265\100\332\036\255\321\246
\356\254\036\307\021\333\027\161\172\331\232\036\306\116\233\364
\250\263\224\237\011\212\177\114\233\376\010\013\054\253\120\320
\067\262\111\065\032\267\036\051\041\166\341\233\360\241\252\130
\147\044\003\341\031\244\321\023\152\361
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Swiss Government Root CA III"

Issuer: CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH

Serial Number:fb:1f:0b:42:2b:a8:41:3e:57:d1:ee:2a:6e:5a:4f:bb

Subject: CN=Swiss Government Root CA III,OU=www.pki.admin.ch,O=Swiss Government PKI,C=CH

Not Valid Before: Fri Apr 15 07:00:00 2016

Not Valid After: Mon Apr 15 06:59:59 2041

Fingerprint (MD5): 56:83:cb:f2:76:2c:93:dc:11:3b:ea:c2:09:19:17:46

Fingerprint (SHA1): cc:ea:e3:24:45:cd:42:18:dd:18:8e:ad:ce:b3:13:3c:7f:b3:40:ad

CKA_CLASS

CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Swiss Government Root CA III"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

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\314\352\343\044\105\315\102\030\335\030\216\255\316\263\023\074
\177\263\100\255
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\126\203\313\362\166\054\223\334\021\073\352\302\011\031\027\106
```

END

CKA_ISSUER MULTILINE_OCTAL

\060\156\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\035\060\033\006\003\125\004\012\023\024\123\167\151\163\163\040
\107\157\166\145\162\156\155\145\156\164\040\120\113\111\061\031
\060\027\006\003\125\004\013\023\020\167\167\167\056\160\153\151
\056\141\144\155\151\156\056\143\150\061\045\060\043\006\003\125
\004\003\023\034\123\167\151\163\163\040\107\157\166\145\162\156
\155\145\156\164\040\122\157\157\164\040\103\101\040\111\111\111

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\021\000\373\037\013\102\053\250\101\076\127\321\356\052\156
\132\117\273

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "Application CA G4 Root"

Issuer: CN=Application CA G4 Root,O=LGPKI,C=JP

Serial Number:31:a5:f3:ca:90:ea:23:ac:d2:9e:bd

Subject: CN=Application CA G4 Root,O=LGPKI,C=JP

Not Valid Before: Wed Feb 15 15:00:00 2017

Not Valid After: Sun Feb 15 14:59:59 2037

Fingerprint (MD5): 80:88:87:a3:29:65:03:a4:53:f1:23:08:41:e6:6b:66

Fingerprint (SHA1): 21:da:ce:4c:2c:34:e6:64:68:ee:06:31:4d:b0:55:a0:a8:9d:4c:1d

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Application CA G4 Root"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\064\040\122\157\157\164

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\064\040\122\157\157\164

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\013\061\245\363\312\220\352\043\254\322\236\275

END

CKA_VALUE MULTILINE_OCTAL

\060\202\003\144\060\202\002\114\240\003\002\001\002\002\013\061
\245\363\312\220\352\043\254\322\236\275\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\060\076\061\013\060\011\006
\003\125\004\006\023\002\112\120\061\016\060\014\006\003\125\004
\012\023\005\114\107\120\113\111\061\037\060\035\006\003\125\004
\003\023\026\101\160\160\154\151\143\141\164\151\157\156\040\103
\101\040\107\064\040\122\157\157\164\060\036\027\015\061\067\060
\062\061\065\061\065\060\060\060\060\132\027\015\063\067\060\062
\061\065\061\064\065\071\065\071\132\060\076\061\013\060\011\006
\003\125\004\006\023\002\112\120\061\016\060\014\006\003\125\004
\012\023\005\114\107\120\113\111\061\037\060\035\006\003\125\004
\003\023\026\101\160\160\154\151\143\141\164\151\157\156\040\103
\101\040\107\064\040\122\157\157\164\060\202\001\042\060\015\006
\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017
\000\060\202\001\012\002\202\001\001\000\257\253\307\345\214\246
\130\236\057\326\005\311\221\167\060\276\336\032\324\016\143\142
\321\314\055\261\321\206\070\215\035\205\146\123\237\252\101\145
\340\130\322\345\051\276\224\250\225\223\074\137\152\305\233\237
\064\350\155\301\306\323\247\345\103\240\022\060\300\071\064\140
\014\213\364\150\365\110\337\351\216\034\256\110\247\273\252\075
\170\267\342\111\273\301\043\004\132\033\220\001\305\175\253\112
\001\241\302\223\152\322\205\263\266\347\166\353\153\157\070\353
\040\122\060\225\010\365\371\054\356\310\300\165\271\001\355\301
\067\126\060\134\235\177\144\302\312\100\040\271\225\205\274\245
\007\175\014\276\056\241\335\306\046\351\052\051\154\237\050\230
\051\121\350\166\023\033\357\056\013\067\132\063\236\300\045\147
\252\017\055\250\324\222\046\070\001\247\320\142\030\056\042\070
\070\170\013\272\122\231\241\174\046\002\261\342\305\342\336\316
\212\002\104\204\242\243\351\213\210\143\061\311\057\070\000\351
\304\002\115\036\043\047\022\110\334\021\261\360\322\342\016\060
\031\257\003\241\007\263\065\224\042\245\002\003\001\000\001\243
\143\060\141\060\035\006\003\125\035\016\004\026\004\024\156\334
\012\065\037\040\302\350\241\323\175\005\116\117\114\140\345\244
\304\147\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024
\156\334\012\065\037\040\302\350\241\323\175\005\116\117\114\140
\345\244\304\147\060\015\006\011\052\206\110\206\367\015\001\001
\013\005\000\003\202\001\001\000\125\063\325\100\267\032\176\117
\334\164\203\016\104\272\077\275\122\225\310\223\226\043\362\001
\271\024\353\312\022\164\315\141\210\064\257\115\136\364\131\212
\253\036\330\343\131\301\036\370\060\265\100\306\273\270\257\321
\355\077\154\252\163\230\202\344\230\064\256\222\101\016\131\066

```
\032\272\120\034\026\364\027\072\054\033\342\227\157\262\257\321
\332\336\024\122\337\200\074\307\117\075\207\236\272\225\275\170
\274\125\074\211\366\056\046\325\025\345\320\100\022\305\263\161
\077\154\146\037\243\374\113\265\116\342\156\334\200\007\303\371
\050\024\173\367\136\026\152\103\247\256\221\001\037\117\145\251
\110\263\316\156\032\006\041\244\323\061\210\210\245\111\021\202
\153\353\271\235\140\376\237\376\305\367\370\177\253\067\356\257
\347\130\106\272\011\344\135\071\247\113\004\330\003\002\311\140
\052\136\125\151\021\013\140\170\201\172\364\161\365\217\106\256
\217\004\250\227\034\200\211\043\143\333\376\353\246\027\016\131
\266\056\271\206\353\137\136\154\335\201\347\253\060\201\043\220
\047\261\367\053\220\071\013\270
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Application CA G4 Root"

Issuer: CN=Application CA G4 Root,O=LGPKI,C=JP

Serial Number:31:a5:f3:ca:90:ea:23:ac:d2:9e:bd

Subject: CN=Application CA G4 Root,O=LGPKI,C=JP

Not Valid Before: Wed Feb 15 15:00:00 2017

Not Valid After: Sun Feb 15 14:59:59 2037

Fingerprint (MD5): 80:88:87:a3:29:65:03:a4:53:f1:23:08:41:e6:6b:66

Fingerprint (SHA1): 21:da:ce:4c:2c:34:e6:64:68:ee:06:31:4d:b0:55:a0:a8:9d:4c:1d

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Application CA G4 Root"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\041\332\316\114\054\064\346\144\150\356\006\061\115\260\125\240
\250\235\114\035
```

END

CKA_CERT_MD5_HASH

MULTILINE_OCTAL

```
\200\210\207\243\051\145\003\244\123\361\043\010\101\346\153\146
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\064\040\122\157\157\164
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\013\061\245\363\312\220\352\043\254\322\236\275
```

```

END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "SSC GDL CA Root A"
# Issuer: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:50:96:6e:72:bd:10:d6:8c:4f:6b:c7:62:3f:9c:70:38
#
Subject: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Tue Jun 04 13:00:47 2013
# Not Valid After: Sat Jun 04 13:00:47 2033
# Fingerprint (MD5): 59:3f:bc:3d:18:77:a4:ae:1c:d8:a2:25:cd:c3:44:3e
# Fingerprint (SHA1): 0c:20:09:a4:a8:8d:8b:42:02:18:52:50:54:0c:c4:2b:df:b5:b0:89
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root A"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\101
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\120\226\156\162\275\020\326\214\117\153\307\142\077\234
\160\070
END

```

CKA_VALUE MULTILINE_OCTAL

\060\202\005\256\060\202\003\226\240\003\002\001\002\002\020\120
\226\156\162\275\020\326\214\117\153\307\142\077\234\160\070\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\161
\061\013\060\011\006\003\125\004\006\023\002\114\124\061\053\060
\051\006\003\125\004\012\023\042\123\153\141\151\164\155\145\156
\151\156\151\157\040\163\145\162\164\151\146\151\153\141\166\151
\155\157\040\143\145\156\164\162\141\163\061\031\060\027\006\003
\125\004\013\023\020\103\101\040\122\117\117\124\040\123\145\162
\166\151\143\145\163\061\032\060\030\006\003\125\004\003\023\021
\123\123\103\040\107\104\114\040\103\101\040\122\157\157\164\040
\101\060\036\027\015\061\063\060\066\060\064\061\063\060\060\064
\067\132\027\015\063\063\060\066\060\064\061\063\060\060\064\067
\132\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124
\061\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164
\155\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153
\141\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060
\027\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040
\123\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004
\003\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157
\157\164\040\101\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\237\134\112\374\034\153\267\031\227\331\001
\067\076\012\351\030\206\323\005\352\242\332\337\011\202\127\356
\155\053\215\232\026\075\125\076\211\327\311\276\341\001\243\200
\065\243\106\354\341\021\355\250\074\225\345\072\122\201\312\116
\230\010\052\017\204\334\273\351\244\371\171\266\111\302\025\236
\240\225\350\017\110\367\120\327\371\246\103\324\007\013\060\101
\311\066\022\142\267\154\170\013\006\077\056\263\236\352\060\375
\101\143\117\204\054\067\316\007\246\071\144\173\161\025\133\053
\001\362\327\175\230\015\030\076\333\205\232\340\001\120\041\044
\270\033\243\143\103\323\201\133\115\014\201\116\070\153\316\140
\305\352\007\342\047\342\353\366\303\124\232\310\311\263\321\053
\062\067\002\274\155\173\236\220\167\043\215\223\023\046\073\207
\127\243\145\117\046\130\024\152\143\045\232\345\141\372\034\127
\375\015\054\151\017\306\012\360\046\071\027\002\243\326\163\201
\102\303\102\061\203\213\340\372\113\116\130\141\061\050\222\074
\306\311\020\010\311\014\133\104\254\143\302\327\142\031\362\161
\356\040\267\111\203\031\236\107\332\126\305\034\254\244\071\150
\027\137\021\032\154\252\245\222\217\275\033\313\305\340\002\200
\125\323\160\123\345\213\052\376\102\352\275\073\134\343\122\000
\175\170\077\046\314\021\256\064\321\062\014\370\173\240\321\175
\075\343\212\274\276\036\036\222\077\070\262\137\062\136\065\304
\176\302\222\015\235\266\313\131\325\353\022\152\335\162\041\121
\021\260\163\345\062\351\326\314\016\335\263\071\132\042\357\344
\365\351\006\151\206\052\174\163\257\030\042\163\054\066\045\334
\125\251\122\061\263\212\216\025\175\262\116\020\173\120\212\000
\114\272\207\342\105\123\167\176\115\145\002\153\214\223\266\153

\165\355\357\226\267\110\216\250\340\272\271\202\262\122\155\041
\377\222\272\321\076\260\134\261\253\031\016\031\163\106\053\323
\122\110\145\064\332\004\065\322\170\076\317\143\065\244\123\346
\113\343\120\203\275\363\233\207\262\041\332\110\241\172\113\354
\262\342\361\324\045\005\224\123\026\114\053\146\044\020\310\340
\327\234\022\244\224\302\001\043\223\241\000\246\340\156\273\071
\342\365\172\150\251\002\003\001\000\001\243\102\060\100\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\035\006\003\125\035\016\004\026\004\024\240\021\176\037\344\224
\144\121\073\022\071\172\154\335\111\223\371\375\300\134\060\015
\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\002
\001\000\014\361\113\214\341\117\026\026\322\352\142\222\266\255
\324\122\216\013\031\144\113\071\360\230\071\163\112\122\352\116
\315\216\144\107\260\060\217\074\017\055\332\042\145\363\031\130
\062\074\177\203\217\012\014\345\124\346\251\276\270\256\227\126
\346\267\015\031\174\275\227\054\152\052\245\126\163\202\336\116
\230\213\075\034\304\320\053\053\273\305\014\370\116\376\055\256
\277\251\147\177\127\263\157\355\377\213\323\126\014\357\060\214
\301\136\246\351\131\212\074\056\334\107\317\314\224\136\203\254
\024\166\372\176\274\014\243\016\134\033\210\354\053\033\065\150
\210\261\365\173\305\363\263\305\032\274\373\357\265\136\337\360
\071\036\165\150\355\104\302\113\042\160\076\134\153\224\311\020
\254\360\375\310\057\176\043\342\201\247\033\316\014\272\105\062
\047\120\105\071\254\340\376\000\264\052\165\007\014\147\033\273
\161\300\202\343\227\126\227\320\344\167\131\271\377\174\147\134
\204\145\273\010\066\250\113\116\221\302\151\376\035\354\232\023
\037\165\063\054\051\306\351\260\150\220\043\377\043\137\177\306
\073\247\050\020\270\037\242\210\315\144\026\045\117\343\200\267
\300\112\200\127\360\220\333\072\262\002\062\040\325\153\310\330
\024\100\311\331\070\031\124\070\353\350\145\073\157\134\325\105
\172\257\333\331\330\225\236\266\247\225\315\034\011\035\002\036
\001\351\004\225\135\205\227\070\025\275\250\307\231\336\323\104
\102\135\206\203\101\044\174\121\211\252\103\011\047\064\350\361
\012\265\226\113\264\363\240\376\362\000\215\152\073\164\271\103
\271\146\271\317\352\353\067\316\377\233\351\043\370\154\323\043
\375\350\351\340\156\370\373\015\122\100\212\254\200\153\040\020
\135\320\250\375\252\075\071\021\053\057\377\122\221\072\240\334
\212\307\166\066\021\131\205\273\060\212\244\110\060\234\141\103
\253\324\257\166\355\300\277\027\224\170\065\333\110\067\010\324
\216\152\000\351\042\335\312\360\323\022\070\074\230\237\140\114
\155\077\102\375\357\214\232\267\036\161\172\032\111\324\140\311
\353\217\364\351\306\277\160\124\210\322\307\127\073\126\315\327
\156\334\355\015\164\176\345\165\101\221\127\223\064\175\251\365
\275\207

END

CKA_NSS_MOZILLA_CA_POLICY

```

CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "SSC GDL CA Root A"
# Issuer: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Serial Number:50:96:6e:72:bd:10:d6:8c:4f:6b:c7:62:3f:9c:70:38
#
Subject: CN=SSC GDL CA Root A,OU=CA ROOT Services,O=Skaitmeninio sertifikavimo centras,C=LT
# Not Valid Before: Tue Jun 04 13:00:47 2013
# Not Valid After: Sat Jun 04 13:00:47 2033
# Fingerprint (MD5): 59:3f:bc:3d:18:77:a4:ae:1c:d8:a2:25:cd:c3:44:3e
# Fingerprint (SHA1): 0c:20:09:a4:a8:8d:8b:42:02:18:52:50:54:0c:c4:2b:df:b5:b0:89
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSC GDL CA Root A"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\014\040\011\244\250\215\213\102\002\030\122\120\124\014\304\053
\337\265\260\211
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\131\077\274\075\030\167\244\256\034\330\242\045\315\303\104\076
END
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\114\124\061
\053\060\051\006\003\125\004\012\023\042\123\153\141\151\164\155
\145\156\151\156\151\157\040\163\145\162\164\151\146\151\153\141
\166\151\155\157\040\143\145\156\164\162\141\163\061\031\060\027
\006\003\125\004\013\023\020\103\101\040\122\117\117\124\040\123
\145\162\166\151\143\145\163\061\032\060\030\006\003\125\004\003
\023\021\123\123\103\040\107\104\114\040\103\101\040\122\157\157
\164\040\101
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\120\226\156\162\275\020\326\214\117\153\307\142\077\234
\160\070
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Halcom Root Certificate Authority"

```

```
# Issuer: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
# Serial Number: 843675 (0xcd9b)
# Subject: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
# Not Valid Before: Fri Jun 10 07:07:50 2016
# Not Valid After: Tue Jun 10 07:07:50 2036
# Fingerprint (MD5):
  69:16:83:a1:f7:27:b9:ec:7c:d2:c6:b3:79:b2:a3:61
# Fingerprint (SHA1): 23:d7:31:fe:dc:5c:8b:b9:7d:e6:dc:8e:13:b4:11:bd:4f:24:00:4f
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root Certificate Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\003\014\337\233
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\200\060\202\002\150\240\003\002\001\002\002\003\014
\337\233\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111
\061\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157
\155\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023
\016\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061
\052\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\145\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061
\066\060\066\061\060\060\067\060\067\065\060\132\027\015\063\066
```

\060\066\061\060\060\067\060\067\065\060\132\060\150\061\013\060
\011\006\003\125\004\006\023\002\123\111\061\024\060\022\006\003
\125\004\012\023\013\110\141\154\143\157\155\040\144\056\144\056
\061\027\060\025\006\003\125\004\141\023\016\126\101\124\123\111
\055\064\063\063\065\063\061\062\066\061\052\060\050\006\003\125
\004\003\023\041\110\141\154\143\157\155\040\122\157\157\164\040
\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150
\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206\110
\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001
\012\002\202\001\001\000\351\122\246\306\032\357\143\273\255\201
\364\220\262\132\217\015\325\026\063\264\034\030\373\313\211\052
\060\273\145\201\304\341\373\002\251\224\007\166\345\327\025\344
\172\144\020\200\352\074\320\263\242\255\256\034\037\352\273\201
\141\230\324\371\215\151\225\304\105\056\003\011\312\206\372\134
\132\021\027\100\060\076\360\306\143\011\311\361\215\101\245\126
\015\005\144\151\113\130\254\052\051\226\273\100\063\026\064\113
\147\154\327\361\264\106\245\352\131\250\103\150\017\214\070\052
\252\074\366\104\003\206\370\212\333\105\041\053\051\036\022\267
\372\245\145\101\336\006\010\130\160\225\076\364\114\331\353\017
\051\251\221\212\236\255\312\022\365\345\225\346\070\331\032\246
\213\234\117\246\110\023\020\245\171\104\275\152\073\051\365\026
\167\100\313\176\233\134\337\276\213\353\347\240\031\157\237\025
\077\047\236\051\261\365\015\374\137\107\242\074\335\056\013\002
\373\364\215\352\354\014\261\371\264\005\254\371\217\251\075\156
\054\035\071\237\320\116\237\116\310\152\236\200\003\141\334\317
\370\155\224\313\017\317\002\003\001\000\001\243\063\060\061\060
\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377
\060\021\006\003\125\035\016\004\012\004\010\102\256\246\103\307
\230\050\260\060\013\006\003\125\035\017\004\004\003\002\001\006
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003
\202\001\001\000\122\271\171\320\333\143\376\031\201\373\014\371
\301\345\120\131\312\235\262\373\134\063\320\070\250\253\265\032
\116\123\045\165\042\323\111\277\312\201\317\323\341\173\243\221
\106\165\312\032\353\331\365\135\274\173\206\065\375\201\227\234
\204\327\046\230\042\374\261\065\320\251\225\266\174\377\344\227
\264\100\176\111\135\150\310\342\324\071\165\047\117\003\221\262
\061\127\277\206\327\155\312\161\000\042\067\320\073\130\044\120
\240\234\214\232\211\216\365\050\106\154\347\026\355\260\201\253
\364\106\046\257\246\350\032\105\167\160\026\222\262\173\161\161
\334\367\337\111\147\300\063\010\016\056\123\301\167\253\307\112
\221\114\022\357\347\016\011\345\165\061\040\256\156\374\132\212
\200\234\020\260\333\250\112\314\363\053\334\066\064\246\367\251
\013\147\235\220\313\075\046\237\165\315\114\311\035\006\012\165
\213\122\300\201\360\321\046\254\314\222\246\024\234\134\074\026
\102\373\223\314\002\250\023\363\332\256\012\303\270\025\364\260
\320\324\340\026\040\117\254\120\230\170\046\224\036\150\353\224
\162\376\367\213

END

```

CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Trust for "Halcom Root Certificate Authority"
# Issuer: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
# Serial Number: 843675 (0xcd9b)
# Subject: CN=Halcom Root Certificate Authority,2.5.4.97=VATSI-43353126,O=Halcom d.d.,C=SI
# Not Valid Before: Fri Jun 10 07:07:50 2016
# Not Valid After: Tue Jun 10 07:07:50 2036
# Fingerprint (MD5): 69:16:83:a1:f7:27:b9:ec:7c:d2:c6:b3:79:b2:a3:61
# Fingerprint (SHA1): 23:d7:31:fe:dc:5c:8b:b9:7d:e6:dc:8e:13:b4:11:bd:4f:24:00:4f
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Halcom Root Certificate Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\043\327\061\376\334\134\213\271\175\346\334\216\023\264\021\275
\117\044\000\117
END
CKA_CERT_MD5_HASH
MULTILINE_OCTAL
\151\026\203\241\367\047\271\354\174\322\306\263\171\262\243\141
END
CKA_ISSUER MULTILINE_OCTAL
\060\150\061\013\060\011\006\003\125\004\006\023\002\123\111\061
\024\060\022\006\003\125\004\012\023\013\110\141\154\143\157\155
\040\144\056\144\056\061\027\060\025\006\003\125\004\141\023\016
\126\101\124\123\111\055\064\063\063\065\063\061\062\066\061\052
\060\050\006\003\125\004\003\023\041\110\141\154\143\157\155\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\014\337\233
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Application CA G3 Root"
# Issuer: CN=Application CA G3 Root,O=LGPKI,C=JP
#

```

```
Serial Number: 49 (0x31)
# Subject: CN=Application CA G3 Root,O=LGPKI,C=JP
# Not Valid Before: Tue Jun 03 15:00:00 2014
# Not Valid After: Sat Jun 03 14:59:59 2034
# Fingerprint (MD5): 47:5e:d1:73:5a:e8:95:77:04:01:a3:3f:33:02:5c:20
# Fingerprint (SHA1): 6f:38:84:56:8e:99:c8:c6:ac:0e:5d:de:2d:b2:02:dd:00:2e:36:63
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Application CA G3 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\061
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\132\060\202\002\102\240\003\002\001\002\002\001\061
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\037
\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143\141
\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164\060
\036\027\015\061\064\060\066\060\063\061\065\060\060\060\060\132
\027\015\063\064\060\066\060\063\061\064\065\071\065\071\132\060
\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061\016
\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061\037
\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143\141
\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164\060
\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001
\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000
\315\105\076\367\321\226\042\134\221\057\076\012\000\003\314\266
\367\154\124\374\050\067\324\004\030\354\255\230\311\257\323\245
\271\347\331\277\116\346\243\231\074\231\156\241\040\036\106\033
\342\165\125\274\322\354\366\210\032\354\064\105\113\203\235\323
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\262\346\335\007\211\301\010\331\370\073\213\222\144\162\135\232
\073\314\255\067\211\307\334\140\171\010\340\160\254\367\053\355
\237\003\111\037\216\076\203\250\156\342\222\134\124\321\171\337
\354\030\072\175\270\155\217\326\243\045\115\255\037\100\246\137
\324\252\116\261\160\030\131\231\362\013\124\151\076\171\050\104
\210\367\161\227\315\177\005\334\312\334\166\112\220\114\153\140
\350\372\046\061\330\265\370\347\374\155\213\044\152\266\357\102
\327\043\124\305\032\143\212\073\307\374\252\155\074\217\313\154
\332\040\260\362\274\145\034\001\114\042\225\015\034\043\037\254
\325\371\316\165\133\352\060\275\114\001\044\037\165\324\141\111
\303\033\231\145\216\010\134\071\070\315\051\303\070\105\315\144
\171\267\233\115\107\352\130\062\372\246\366\222\360\301\267\137
\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035\016
\004\026\004\024\251\065\052\110\276\054\067\355\206\333\174\125
\207\000\046\276\030\055\134\056\060\016\006\003\125\035\017\001
\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001
\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035\043
\004\030\060\026\200\024\251\065\052\110\276\054\067\355\206\333
\174\125\207\000\046\276\030\055\134\056\060\015\006\011\052\206
\110\206\367\015\001\001\013\005\000\003\202\001\001\000\266\202
\275\305\106\320\161\213\245\221\075\176\055\132\371\234\204\175
\007\047\225\035\347\115\310\174\354\346\223\350\126\032\172\060
\110\073\014\372\116\365\011\262\257\210\255\224\354\375\262\255
\057\346\005\164\041\033\204\213\070\052\303\355\357\106\150\265
\335\122\372\160\302\165\117\377\243\101\056\074\027\224\114\011
\042\264\216\301\177\304\246\254\355\203\150\317\145\136\354\172
\275\305\146\356\320\243\177\362\127\261\010\302\171\160\353\162
\177\101\131\011\171\165\361\274\261\041\376\203\263\104\075\211
\243\276\261\172\330\235\303\037\346\304\124\341\215\345\330\120
\334\344\126\067\173\276\050\000\363\054\167\332\043\177\140\230
\075\005\026\362\170\151\255\231\303\072\164\154\076\232\262\224
\355\217\252\366\123\153\347\310\267\350\074\214\373\307\174\117
\031\135\244\146\025\351\177\207\240\320\325\255\040\244\106\011
\105\254\345\310\145\207\273\006\337\374\327\150\126\103\163\242
\000\231\062\222\302\016\240\034\016\221\275\225\130\274\223\237
\204\302\245\146\347\145\315\051\342\142\362\005\222\140

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Application CA G3 Root"

Issuer: CN=Application CA G3 Root,O=LGPKI,C=JP

#

Serial Number: 49 (0x31)

Subject: CN=Application CA G3 Root,O=LGPKI,C=JP

```
# Not Valid Before: Tue Jun 03 15:00:00 2014
# Not Valid After: Sat Jun 03 14:59:59 2034
# Fingerprint (MD5): 47:5e:d1:73:5a:e8:95:77:04:01:a3:3f:33:02:5c:20
# Fingerprint (SHA1): 6f:38:84:56:8e:99:c8:c6:ac:0e:5d:de:2d:b2:02:dd:00:2e:36:63
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Application CA G3 Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\157\070\204\126\216\231\310\306\254\016\135\336\055\262\002\335
\000\056\066\143
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\107\136\321\163\132\350\225\167\004\001\243\077\063\002\134\040
END
CKA_ISSUER MULTILINE_OCTAL
\060\076\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\016\060\014\006\003\125\004\012\023\005\114\107\120\113\111\061
\037\060\035\006\003\125\004\003\023\026\101\160\160\154\151\143
\141\164\151\157\156\040\103\101\040\107\063\040\122\157\157\164
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\061
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "GLOBALTRUST 2015"
# Issuer: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT
# Serial Number: 0 (0x0)
# Subject: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT
# Not Valid Before: Thu Jun 11 00:00:00 2015
# Not Valid After: Sun Jun 10 00:00:00 2040
# Fingerprint (MD5): da:5a:b9:da:8e:0a:38:d4:82:63:03:9d:6c:96:6c:ed
# Fingerprint (SHA1): 46:5b:26:be:be:71:06:dd:85:44:c1:13:9d:9f:a2:57:00:c1:d7:bd
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8
```


"GLOBALTRUST 2015"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\001\000

END

CKA_VALUE MULTILINE_OCTAL

\060\202\006\014\060\202\003\364\240\003\002\001\002\002\001\000
\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060
\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061\015
\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043\060
\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145\162
\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107\155
\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114\117
\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061\031
\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114\124
\122\125\123\124\040\062\060\061\065\060\036\027\015\061\065\060
\066\061\061\060\060\060\060\060\060\132\027\015\064\060\060\066
\061\060\060\060\060\060\060\060\132\060\201\227\061\013\060\011
\006\003\125\004\006\023\002\101\124\061\015\060\013\006\003\125
\004\010\023\004\127\151\145\156\061\015\060\013\006\003\125\004

\007\023\004\127\151\145\156\061\043\060\041\006\003\125\004\012
\023\032\145\055\143\157\155\155\145\162\143\145\040\155\157\156
\151\164\157\162\151\156\147\040\107\155\142\110\061\052\060\050
\006\003\125\004\013\023\041\107\114\117\102\101\114\124\122\125
\123\124\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\123\145\162\166\151\143\145\061\031\060\027\006\003\125\004
\003\023\020\107\114\117\102\101\114\124\122\125\123\124\040\062
\060\061\065\060\202\002\040\060\015\006\011\052\206\110\206\367
\015\001\001\001\005\000\003\202\002\015\000\060\202\002\010\002
\202\002\001\000\324\246\227\250\362\364\220\021\103\255\264\202
\106\101\361\057\221\157\143\242\315\015\040\334\275\014\070\212
\145\112\012\053\072\250\164\251\167\241\213\216\362\057\201\367
\204\030\315\255\353\142\266\222\175\340\101\345\116\124\070\067
\202\357\313\340\355\317\273\312\314\243\113\367\133\376\270\174
\247\010\155\313\103\304\114\042\024\146\343\235\003\271\167\041
\253\104\153\041\107\043\310\040\372\052\313\221\166\035\165\154
\370\233\351\017\046\351\103\057\232\040\005\150\030\307\216\231
\205\055\101\007\246\144\216\130\341\215\225\200\244\115\137\365
\002\330\201\171\333\325\347\337\242\042\375\024\247\147\026\354
\331\130\114\312\251\335\352\032\216\251\010\144\117\121\041\266
\162\242\116\377\120\161\275\073\145\344\275\177\123\021\256\337
\020\071\173\135\366\107\160\027\367\103\221\003\172\141\045\137
\054\374\370\211\021\074\354\071\124\026\111\304\041\232\161\340
\171\213\166\035\166\075\007\131\270\007\261\214\334\307\315\116
\341\373\255\103\115\077\100\357\041\142\057\061\104\116\151\307
\157\042\313\253\124\113\350\302\372\021\150\254\310\156\016\336
\154\305\047\226\011\121\002\115\001\266\127\277\062\050\325\011
\103\226\367\304\210\265\371\124\376\032\072\152\267\054\265\044
\144\373\112\170\162\303\374\331\117\310\116\043\271\051\330\015
\241\110\101\223\002\155\277\022\205\233\306\305\140\055\360\221
\374\231\375\040\224\236\161\143\253\325\111\253\220\354\207\071
\205\177\215\205\314\013\350\333\113\073\016\374\302\166\175\106
\347\071\046\236\337\125\337\036\204\371\101\066\046\154\002\131
\053\216\373\274\351\037\047\044\142\004\147\204\341\077\330\235
\030\116\226\240\045\356\312\050\003\117\002\121\317\367\065\067
\151\244\264\326\326\325\036\031\103\047\026\037\107\121\356\112
\011\114\021\132\266\133\075\141\350\073\020\276\326\106\346\364
\034\375\270\105\275\174\372\165\132\354\341\122\043\015\216\037
\206\227\123\221\134\233\233\050\326\216\345\156\047\255\040\214
\247\301\101\251\227\067\213\054\352\156\030\005\227\366\316\003
\122\361\275\171\064\233\100\307\043\222\164\363\157\355\243\351
\131\360\125\113\002\001\003\243\143\060\141\060\017\006\003\125
\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003
\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003
\125\035\016\004\026\004\024\313\260\335\075\214\074\337\142\054
\053\146\074\236\074\351\025\155\161\264\327\060\037\006\003\125
\035\043\004\030\060\026\200\024\313\260\335\075\214\074\337\142
\054\053\146\074\236\074\351\025\155\161\264\327\060\015\006\011

\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001\000
\242\175\125\004\146\356\026\024\274\202\201\207\045\031\071\142
\364\376\073\037\341\300\163\000\161\312\165\251\342\163\361\305
\015\101\243\135\216\301\055\331\145\133\331\211\342\360\216\305
\240\175\275\313\314\106\123\037\137\355\040\266\002\052\326\023
\362\235\175\121\112\100\125\161\255\236\354\166\352\105\040\216
\252\372\172\103\232\160\147\176\023\336\230\350\313\215\335\037
\254\064\322\241\265\355\376\270\347\026\317\370\321\070\060\215
\064\211\322\316\175\201\322\036\377\121\030\123\066\223\334\011
\313\010\026\270\010\327\132\060\220\212\012\371\057\265\317\304
\315\124\162\052\306\275\001\347\130\013\156\006\100\264\011\316
\264\216\263\232\351\211\221\224\254\172\124\341\373\343\204\054
\203\240\117\376\353\350\301\364\353\266\046\323\070\304\055\255
\254\105\200\064\155\041\075\135\205\072\342\173\376\124\267\335
\350\205\124\313\244\361\253\051\120\170\327\044\265\243\057\236
\257\021\146\256\030\270\375\135\050\317\100\327\125\340\054\353
\122\061\150\103\146\005\227\222\273\305\361\041\054\375\022\144
\061\231\103\157\213\235\113\140\376\024\136\122\263\043\250\341
\230\172\356\024\311\241\342\314\077\166\041\142\375\153\015\331
\264\112\225\346\156\133\172\044\303\323\306\326\037\242\353\067
\153\116\243\337\142\353\353\016\112\010\277\353\030\210\373\107
\032\255\302\121\303\325\174\367\037\053\263\310\112\120\016\151
\130\040\142\001\112\133\312\143\226\046\042\256\366\351\234\100
\254\147\003\235\235\151\025\302\300\370\135\247\044\261\047\074
\277\005\342\253\242\312\311\260\055\176\243\301\061\040\106\041
\145\222\335\312\336\337\223\033\274\155\057\137\251\026\244\127
\207\054\162\232\132\202\147\321\104\342\075\011\012\201\214\036
\020\375\306\064\150\354\377\167\141\166\177\046\367\333\374\022
\106\022\252\300\321\370\171\205\242\002\314\213\252\244\255\154
\024\300\275\374\150\256\104\175\042\371\012\105\135\354\004\346
\372\343\244\305\346\371\262\031\303\331\214\250\223\173\072\212
\151\073\122\023\074\035\063\002\116\226\100\237\271\225\375\223
\027\063\301\311\013\366\375\275\151\020\365\255\051\373\343\332

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "GLOBALTRUST 2015"

#

Issuer: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT

Serial Number: 0 (0x0)

Subject: CN=GLOBALTRUST 2015,OU=GLOBALTRUST Certification Service,O=e-commerce monitoring
GmbH,L=Wien,ST=Wien,C=AT

Not Valid Before: Thu Jun 11 00:00:00 2015

```
# Not Valid After: Sun Jun 10 00:00:00 2040
# Fingerprint (MD5): da:5a:b9:da:8e:0a:38:d4:82:63:03:9d:6c:96:6c:ed
# Fingerprint (SHA1): 46:5b:26:be:be:71:06:dd:85:44:c1:13:9d:9f:a2:57:00:c1:d7:bd
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GLOBALTRUST 2015"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\106\133\046\276\276\161\006\335\205\104\301\023\235\237\242\127
\000\301\327\275
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\332\132\271\332\216\012\070\324\202\143\003\235\154\226\154\355
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\227\061\013\060\011\006\003\125\004\006\023\002\101\124
\061\015\060\013\006\003\125\004\010\023\004\127\151\145\156\061
\015\060\013\006\003\125\004\007\023\004\127\151\145\156\061\043
\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155\145
\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040\107
\155\142\110\061\052\060\050\006\003\125\004\013\023\041\107\114
\117\102\101\114\124\122\125\123\124\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\061
\031\060\027\006\003\125\004\003\023\020\107\114\117\102\101\114
\124\122\125\123\124\040\062\060\061\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Microsoft ECC Product Root Certificate Authority 2018"
# Issuer: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:14:98:26:66:dc:7c:cd:8f:40:53:67:7b:b9:99:ec:85
# Subject: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Feb 27 20:42:08 2018
# Not Valid After: Fri Feb 27 20:50:46 2043
# Fingerprint (MD5): 1f:12:4e:de:13:e0:6a:02:3c:d7:c0:9a:4f:48:c3:d6
# Fingerprint (SHA1): 06:f1:aa:33:0b:92:7b:75:3a:40:e6:8c:df:22:e3:4b:cb:ef:33:52
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
```

```
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Product Root Certificate Authority 2018"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\070
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\024\230\046\146\334\174\315\217\100\123\147\173\271\231
\354\205
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\043\060\202\002\250\240\003\002\001\002\002\020\024
\230\046\146\334\174\315\217\100\123\147\173\271\231\354\205\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\224\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006
\003\125\004\010\023\012\127\141\163\150\151\156\147\164\157\156
\061\020\060\016\006\003\125\004\007\023\007\122\145\144\155\157
\156\144\061\036\060\034\006\003\125\004\012\023\025\115\151\143
\162\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151
\157\156\061\076\060\074\006\003\125\004\003\023\065\115\151\143
\162\157\163\157\146\164\040\105\103\103\040\120\162\157\144\165
\143\164\040\122\157\157\164\040\103\145\162\164\151\146\151\143
```

\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\070\060\036\027\015\061\070\060\062\062\067\062\060\064\062
\060\070\132\027\015\064\063\060\062\062\067\062\060\065\060\064
\066\132\060\201\224\061\013\060\011\006\003\125\004\006\023\002
\125\123\061\023\060\021\006\003\125\004\010\023\012\127\141\163
\150\151\156\147\164\157\156\061\020\060\016\006\003\125\004\007
\023\007\122\145\144\155\157\156\144\061\036\060\034\006\003\125
\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103\157
\162\160\157\162\141\164\151\157\156\061\076\060\074\006\003\125
\004\003\023\065\115\151\143\162\157\163\157\146\164\040\105\103
\103\040\120\162\157\144\165\143\164\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\061\070\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\307\021\026\052\166\035\126\216\276\271\142\145\324\303\316
\264\360\303\060\354\217\155\327\156\071\274\310\111\253\253\270
\343\103\170\325\201\006\135\357\307\175\237\316\326\263\220\165
\336\014\260\220\336\043\272\310\321\076\147\340\031\251\033\206
\061\036\137\064\055\356\027\375\025\373\176\047\212\062\241\352
\311\217\311\176\030\313\057\073\054\110\172\175\246\364\001\007
\254\243\201\274\060\201\271\060\016\006\003\125\035\017\001\001
\377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001
\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004
\026\004\024\103\357\160\207\270\235\277\354\210\031\334\306\304
\153\165\015\165\064\063\010\060\020\006\011\053\006\001\004\001
\202\067\025\001\004\003\002\001\000\060\145\006\003\125\035\040
\004\136\060\134\060\006\006\004\125\035\040\000\060\122\006\014
\053\006\001\004\001\202\067\114\203\175\001\001\060\102\060\100
\006\010\053\006\001\005\005\007\002\001\026\064\150\164\164\160
\072\057\057\167\167\167\056\155\151\143\162\157\163\157\146\164
\056\143\157\155\057\160\153\151\157\160\163\057\104\157\143\163
\057\122\145\160\157\163\151\164\157\162\171\056\150\164\155\000
\060\012\006\010\052\206\110\316\075\004\003\003\003\151\000\060
\146\002\061\000\241\300\111\104\135\062\125\047\314\076\220\156
\045\042\235\044\133\233\121\065\307\221\111\111\052\243\371\157
\117\034\315\335\234\341\265\127\311\236\302\042\105\233\006\025
\160\034\105\277\002\061\000\305\323\050\353\162\307\076\260\254
\047\011\177\142\075\140\171\345\222\361\105\052\271\245\002\344
\140\273\376\172\053\234\140\247\265\231\024\362\260\276\360\273
\005\226\126\126\217\301\150

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Microsoft ECC Product Root Certificate Authority 2018"

```

# Issuer: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number:14:98:26:66:dc:7c:cd:8f:40:53:67:7b:b9:99:ec:85
# Subject: CN=Microsoft ECC Product Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
#
Not Valid Before: Tue Feb 27 20:42:08 2018
# Not Valid After: Fri Feb 27 20:50:46 2043
# Fingerprint (MD5): 1f:12:4e:de:13:e0:6a:02:3c:d7:c0:9a:4f:48:c3:d6
# Fingerprint (SHA1): 06:f1:aa:33:0b:92:7b:75:3a:40:e6:8c:df:22:e3:4b:cb:ef:33:52
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Product Root Certificate Authority 2018"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\006\361\252\063\013\222\173\165\072\100\346\214\337\042\343\113
\313\357\063\122
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\037\022\116\336\023\340\152\002\074\327\300\232\117\110\303\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\076\060\074\006\003\125\004\003
\023\065\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\120\162\157\144\165\143\164\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\024\230\046\146\334\174\315\217\100\123\147\173\271\231
\354\205
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "emSign Root CA - G2"
# Issuer: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Serial Number:86:4d:bf:0f:e3:5e:d7:7d:8e:d8

```

```
# Subject: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid
After: Wed Feb 18 18:30:00 2043
# Fingerprint (MD5): 63:ac:61:e5:f7:da:aa:05:80:53:bd:e4:ab:fd:bb:30
# Fingerprint (SHA1): 1e:65:77:b9:cf:70:d0:17:ca:e1:bd:a1:35:1d:47:25:a9:73:c0:6d
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\062
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\013\000\206\115\277\017\343\136\327\175\216\330
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\225\060\202\003\175\240\003\002\001\002\002\013\000
\206\115\277\017\343\136\327\175\216\330\060\015\006\011\052\206
\110\206\367\015\001\001\014\005\000\060\147\061\013\060\011\006
\003\125\004\006\023\002\111\116\061\023\060\021\006\003\125\004
\013\023\012\145\155\123\151\147\156\040\120\113\111\061\045\060
\043\006\003\125\004\012\023\034\145\115\165\144\150\162\141\040
\124\145\143\150\156\157\154\157\147\151\145\163\040\114\151\155
\151\164\145\144\061\034\060\032\006\003\125\004\003\023\023\145
\155\123\151\147\156\040\122\157\157\164\040\103\101\040\055\040
\107\062\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060
\060\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060
\060\132\060\147\061\013\060\011\006\003\125\004\006\023\002\111
```


\116\061\023\060\021\006\003\125\004\013\023\012\145\155\123\151
\147\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023
\034\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154
\157\147\151\145\163\040\114\151\155\151\164\145\144\061\034\060
\032\006\003\125\004\003\023\023\145\155\123\151\147\156\040\122
\157\157\164\040\103\101\040\055\040\107\062\060\202\002\042\060
\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202
\002\017\000\060\202\002\012\002\202\002\001\000\303\160\030\205
\226\332\101\337\034\257\254\135\063\160\304\135\073\053\342\025
\311\044\356\310\123\066\257\133\364\323\154\024\175\307\123\373
\073\071\070\316\120\154\306\005\026\167\235\135\002\072\200\041
\113\262\062\253\161\247\243\343\306\155\337\263\262\021\275\342
\150\373\073\012\303\370\220\014\223\303\062\207\365\246\136\352
\005\330\036\262\152\343\117\331\124\303\134\101\122\066\075\302
\051\343\100\177\110\003\166\201\106\176\145\245\055\040\353\325
\214\114\166\353\367\233\065\245\321\042\313\141\226\103\206\375
\306\201\371\004\160\017\015\155\227\275\367\361\231\157\320\315
\250\114\025\062\340\035\336\355\321\217\346\230\027\037\275\114
\216\241\317\012\203\150\373\033\375\177\103\123\005\077\241\120
\066\274\207\314\024\265\301\220\253\320\203\170\224\351\215\147
\003\331\263\366\000\307\125\033\252\025\244\300\024\171\114\350
\160\054\240\226\373\105\165\103\043\202\014\101\157\016\052\205
\253\265\035\163\306\360\353\175\207\002\373\144\310\274\266\104
\363\256\365\010\307\026\374\033\322\305\377\271\012\170\041\073
\264\146\132\127\060\323\235\173\242\176\135\346\261\036\004\254
\173\020\340\376\345\126\355\200\042\062\000\206\260\027\241\347
\103\211\326\373\244\307\037\355\060\001\166\266\024\117\122\150
\033\360\042\053\342\175\214\356\206\116\067\200\014\076\013\060
\064\201\146\021\314\270\022\277\074\237\340\322\101\201\267\357
\302\324\277\277\035\104\163\102\022\144\062\124\147\063\244\157
\136\200\255\174\252\051\112\131\354\346\332\331\231\070\275\357
\125\243\156\177\074\101\163\372\326\121\251\004\045\017\300\050
\354\356\272\116\142\364\224\046\322\076\225\306\305\373\176\352
\220\212\216\135\211\025\117\167\056\244\064\251\303\341\374\366
\101\155\217\221\212\143\345\347\313\202\361\143\355\310\274\062
\021\213\047\172\223\055\103\076\076\365\334\062\064\312\253\336
\022\233\010\257\160\064\075\334\056\311\102\073\011\055\143\203
\103\147\030\124\372\137\034\253\323\020\176\124\073\174\334\122
\130\133\313\365\352\115\251\155\244\070\221\134\100\335\245\335
\137\327\131\143\045\121\325\056\175\050\316\371\002\003\001\000
\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024
\355\354\115\105\141\030\050\347\263\043\050\021\034\115\245\047
\015\136\354\364\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001
\001\014\005\000\003\202\002\001\000\010\120\277\212\124\040\360
\244\302\124\034\105\045\157\354\153\072\046\221\055\044\065\206
\304\041\230\070\007\172\033\253\013\011\355\045\375\363\077\031

\201\374\301\247\075\047\140\051\160\300\230\326\154\123\165\107
\154\330\362\220\204\242\336\277\166\011\200\361\126\352\320\154
\141\300\363\071\140\337\322\146\253\215\311\022\061\073\167\024
\166\120\034\301\377\257\111\354\335\124\047\375\300\354\357\110
\001\167\253\106\271\226\073\333\165\263\111\066\227\322\161\005
\151\355\105\035\346\300\154\146\117\043\134\355\112\103\370\050
\375\127\377\030\063\347\254\201\146\306\220\010\030\115\354\202
\163\274\224\013\375\027\065\032\001\353\257\354\165\236\343\274
\115\364\236\376\155\014\305\367\174\207\270\205\300\010\364\313
\245\001\341\203\154\314\277\220\273\004\006\356\014\167\333\217
\120\256\333\336\031\363\175\262\205\047\301\163\070\226\032\311
\016\276\135\336\263\141\034\037\053\133\113\327\075\077\355\063
\062\231\032\357\061\202\324\121\353\274\266\377\026\207\156\037
\316\223\171\233\164\102\066\172\245\312\145\067\072\032\304\071
\303\277\064\311\350\040\266\022\174\276\250\177\300\074\120\256
\125\113\371\377\010\360\027\341\317\233\303\356\247\140\021\217
\327\004\247\335\276\322\247\036\255\361\332\160\332\271\204\307
\206\145\326\300\375\334\335\121\037\371\317\234\327\167\020\044
\236\137\046\161\361\233\321\343\015\111\065\320\232\140\177\213
\200\036\160\331\353\357\153\230\217\071\132\135\101\230\067\263
\153\157\245\350\270\155\051\236\035\077\004\033\126\132\235\024
\112\022\017\245\141\000\252\316\321\044\030\372\373\126\124\141
\166\170\071\272\302\303\336\266\017\030\115\332\235\175\037\034
\075\056\333\224\121\302\352\251\063\353\025\166\057\300\356\055
\242\350\373\050\231\300\221\244\324\175\161\235\021\241\125\264
\130\240\324\100\067\321\154\311\143\145\365\274\004\073\205\131
\347\210\050\340\151\160\006\252\073\024\352\311\045\064\317\147
\304\074\171\254\120\202\010\113\143\364\250\174\120\170\306\053
\144\052\200\376\144\302\013\155\214\340\051\100\306\202\241\354
\314\174\256\012\017\265\251\071\165

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "emSign Root CA - G2"

Issuer: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

Serial Number:86:4d:bf:0f:e3:5e:d7:7d:8e:d8

Subject: CN=emSign Root CA - G2,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

Not Valid Before: Sun Feb 18 18:30:00 2018

Not Valid After: Wed Feb 18 18:30:00 2043

Fingerprint (MD5): 63:ac:61:e5:f7:da:aa:05:80:53:bd:e4:ab:fd:bb:30

Fingerprint (SHA1): 1e:65:77:b9:cf:70:d0:17:ca:e1:bd:a1:35:1d:47:25:a9:73:c0:6d

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN

```
CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\036\145\167\271\317\160\320\027\312\341\275\241\065\035\107\045
\251\163\300\155
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\143\254\141\345\367\332\252\005\200\123\275\344\253\375\273\060
END
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\000\206\115\277\017\343\136\327\175\216\330
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "emSign Root CA - C2"
# Issuer: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US
# Serial Number:2f:0a:b7:6b:0d:cb:4a:af:27:58
# Subject: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After: Wed Feb 18 18:30:00 2043
# Fingerprint (MD5): eb:24:3b:fa:70:63:c8:e1:cd:5f:0e:ea:c8:97:2f:21
# Fingerprint (SHA1): bc:a2:18:80:74:c3:14:7e:16:f4:c4:8c:59:10:a8:9e:f7:52:f4:79
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - C2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
```

```
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\062
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\012\057\012\267\153\015\313\112\257\047\130
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\162\060\202\003\132\240\003\002\001\002\002\012\057
\012\267\153\015\313\112\257\047\130\060\015\006\011\052\206\110
\206\367\015\001\001\014\005\000\060\126\061\013\060\011\006\003
\125\004\006\023\002\125\123\061\023\060\021\006\003\125\004\013
\023\012\145\155\123\151\147\156\040\120\113\111\061\024\060\022
\006\003\125\004\012\023\013\145\115\165\144\150\162\141\040\111
\156\143\061\034\060\032\006\003\125\004\003\023\023\145\155\123
\151\147\156\040\122\157\157\164\040\103\101\040\055\040\103\062
\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060\060
\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060\132
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\062\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\214\175\175\145\003\344\333
\232\037\130\042\171\221\200\345\275\354\205\161\340\265\011\177
\140\321\145\373\074\337\262\153\232\137\251\313\256\032\126\166
\040\130\356\055\350\056\374\176\010\337\113\270\327\371\316\023
\212\162\063\022\253\226\160\217\263\213\107\335\341\047\074\064
\067\373\044\343\151\333\265\126\137\112\260\121\212\263\054\064
\102\267\353\073\316\222\334\177\035\144\313\114\325\040\230\372
\057\116\256\077\042\267\220\212\375\371\200\054\255\130\376\337
\333\255\233\247\266\060\024\054\104\333\055\110\215\337\011\006
\000\032\372\020\115\017\037\120\266\256\116\243\126\151\200\044
\065\201\136\350\165\007\035\003\351\332\355\124\153\115\050\164
\305\342\017\232\021\027\022\334\016\161\200\160\115\110\377\321
\075\230\260\235\222\010\027\212\066\024\232\047\050\357\345\360
```

\145\341\150\076\033\332\351\342\011\346\235\067\056\335\303\273
\225\267\021\301\321\321\302\146\231\215\151\311\340\067\350\226
\227\051\144\115\063\322\021\215\203\025\064\047\051\342\070\101
\332\322\030\211\237\213\126\117\033\301\017\177\325\315\267\267
\031\257\336\357\173\265\246\145\127\155\215\027\213\155\113\132
\252\334\237\214\072\235\050\031\102\301\316\222\237\107\035\052
\031\132\233\076\351\020\064\140\043\070\262\015\360\240\315\100
\334\333\107\130\200\227\147\174\037\343\022\242\047\001\243\200
\042\167\304\343\055\147\015\277\217\050\011\142\371\335\232\305
\004\304\303\215\242\000\351\372\306\326\336\010\245\271\307\151
\320\073\250\042\111\173\152\251\044\336\247\331\344\012\001\111
\372\122\044\003\034\373\022\250\320\145\161\110\120\341\217\364
\143\111\224\346\270\041\233\143\201\366\265\320\113\121\133\324
\224\102\174\223\015\234\222\046\344\005\001\333\355\221\133\072
\271\116\014\373\111\264\241\243\303\154\146\115\024\155\011\305
\305\310\252\103\333\250\125\060\054\053\136\022\223\332\006\361
\015\363\176\303\064\361\307\117\241\026\364\132\122\031\222\124
\172\230\240\373\057\311\307\377\067\306\273\303\310\046\377\170
\030\140\175\105\237\124\340\016\275\257\167\217\233\057\014\276
\274\337\067\021\312\264\176\254\277\002\003\001\000\001\243\102
\060\100\060\035\006\003\125\035\016\004\026\004\024\263\367\212
\244\326\017\210\000\131\350\121\027\117\325\176\354\206\042\201
\235\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005
\000\003\202\002\001\000\064\045\246\045\214\321\313\366\235\235
\007\346\065\154\006\255\061\332\256\266\103\102\360\250\004\354
\010\133\362\271\276\340\304\320\262\265\033\250\003\313\055\230
\363\204\273\371\140\360\210\061\217\201\110\216\214\241\042\265
\224\127\034\242\055\116\315\243\203\376\132\061\024\073\005\023
\304\212\144\020\353\157\031\104\075\176\043\245\160\141\355\041
\220\315\006\126\152\355\152\144\265\160\061\171\136\171\104\363
\354\242\275\272\247\141\115\000\304\105\175\224\041\322\302\327
\204\250\044\362\053\245\111\050\040\253\037\036\316\003\362\173
\255\305\152\046\004\213\207\077\167\064\143\334\163\202\236\306
\142\301\226\124\323\147\137\345\212\115\026\074\122\301\233\304
\343\127\043\032\233\053\245\143\037\100\122\066\263\235\321\155
\345\351\343\271\122\003\026\004\340\334\343\004\123\036\370\114
\005\270\113\336\004\042\101\020\001\371\256\366\056\336\230\266
\242\273\011\343\156\023\251\141\020\127\133\102\260\051\020\317
\346\052\374\351\032\227\274\207\002\102\203\170\345\334\077\272
\015\340\017\223\165\167\066\245\332\261\271\120\247\004\355\021
\231\154\366\046\221\222\111\342\143\211\071\077\070\374\021\260
\363\126\267\001\277\051\162\364\342\215\255\153\170\342\076\222
\156\040\045\155\130\060\034\365\035\332\270\021\040\046\136\153
\112\024\146\005\333\063\033\102\346\316\301\356\144\360\205\111
\200\265\345\020\103\010\340\154\153\306\303\104\237\051\004\125
\066\132\057\302\125\160\200\010\113\232\276\012\057\170\016\005

```
\153\226\355\337\312\064\075\154\154\004\377\214\246\207\002\165
\133\103\062\254\320\207\034\275\042\210\112\271\165\200\032\267
\254\240\213\312\016\015\361\026\116\253\004\352\343\175\134\011
\172\134\042\377\020\042\262\210\307\074\225\120\277\325\265\315
\122\050\036\237\204\102\017\370\061\000\266\324\326\310\137\144
\150\212\200\176\127\170\112\343\177\133\377\016\335\171\117\061
\330\317\034\227\123\206\322\163\337\156\160\021\227\221\217\063
\273\311\202\056\073\322\073\150\341\047\214\203\241\314\001\155
\304\201\276\172\265\007\015\057\002\075\123\311\231\234\333\321
\201\103\053\220\010\013
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "emSign Root CA - C2"

Issuer: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US

Serial Number:2f:0a:b7:6b:0d:cb:4a:af:27:58

Subject: CN=emSign Root CA - C2,O=eMudhra Inc,OU=emSign PKI,C=US

Not Valid Before: Sun Feb 18 18:30:00 2018

Not Valid After: Wed Feb 18 18:30:00 2043

Fingerprint (MD5): eb:24:3b:fa:70:63:c8:e1:cd:5f:0e:ea:c8:97:2f:21

Fingerprint (SHA1):

bc:a2:18:80:74:c3:14:7e:16:f4:c4:8c:59:10:a8:9e:f7:52:f4:79

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "emSign Root CA - C2"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\274\242\030\200\164\303\024\176\026\364\304\214\131\020\250\236
\367\122\364\171
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\353\044\073\372\160\143\310\341\315\137\016\352\310\227\057\041
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164
\040\103\101\040\055\040\103\062
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\012\057\012\267\153\015\313\112\257\047\130
```

```
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "Microsoft ECC TS Root Certificate Authority 2018"
# Issuer: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Serial Number: 15:38:75:e1:64:7e:d1:b0:47:b4:ef:af:41:12:82:45
# Subject: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft
Corporation,L=Redmond,ST=Washington,C=US
# Not Valid Before: Tue Feb 27 20:51:34 2018
# Not Valid After: Fri Feb 27 21:00:12 2043
# Fingerprint (MD5): 37:94:29:58:86:2a:06:e6:bb:cf:d7:ab:59:c7:f2:3c
# Fingerprint (SHA1): 31:f9:fc:8b:a3:80:59:86:b7:21:ea:72:95:c6:5b:3a:44:53:42:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC TS Root Certificate Authority 2018"
CKA_CERTIFICATE_TYPE
CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
\061\070
```

```
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060
```

\061\070
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\025\070\165\341\144\176\321\260\107\264\357\257\101\022
\202\105
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\027\060\202\002\236\240\003\002\001\002\002\020\025
\070\165\341\144\176\321\260\107\264\357\257\101\022\202\105\060
\012\006\010\052\206\110\316\075\004\003\003\060\201\217\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006
\003\125\004\010\023\012\127\141\163\150\151\156\147\164\157\156
\061\020\060\016\006\003\125\004\007\023\007\122\145\144\155\157
\156\144\061\036\060\034\006\003\125\004\012\023\025\115\151\143
\162\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151
\157\156\061\071\060\067\006\003\125\004\003\023\060\115\151\143
\162\157\163\157\146\164\040\105\103\103\040\124\123\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101
\165\164\150\157\162\151\164\171\040\062\060\061\070\060\036\027
\015\061\070\060\062\062\067\062\060\065\061\063\064\132\027\015
\064\063\060\062\062\067\062\061\060\060\061\062\132\060\201\217
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023\060
\021\006\003\125\004\010\023\012\127\141\163\150\151\156\147\164
\157\156\061\020\060\016\006\003\125\004\007\023\007\122\145\144
\155\157\156\144\061\036\060\034\006\003\125\004\012\023\025\115
\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141
\164\151\157\156\061\071\060\067\006\003\125\004\003\023\060\115
\151\143\162\157\163\157\146\164\040\105\103\103\040\124\123\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145
\040\101\165\164\150\157\162\151\164\171\040\062\060\061\070\060
\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201
\004\000\042\003\142\000\004\336\315\273\160\040\361\045\040\264
\224\350\327\264\073\017\156\207\335\253\254\317\115\100\057\201
\063\153\131\011\030\326\207\015\046\043\234\264\215\225\235\166
\237\245\271\006\102\346\255\066\262\304\263\256\172\074\010\325
\313\235\072\136\105\041\154\013\343\040\365\233\302\335\104\063
\343\102\271\352\362\050\102\222\252\376\014\007\312\212\023\231
\073\142\000\355\332\363\065\243\201\274\060\201\271\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035
\006\003\125\035\016\004\026\004\024\350\107\310\102\232\260\235
\256\157\013\050\073\230\025\217\343\261\350\200\262\060\020\006
\011\053\006\001\004\001\202\067\025\001\004\003\002\001\000\060
\145\006\003\125\035\040\004\136\060\134\060\006\006\004\125\035
\040\000\060\122\006\014\053\006\001\004\001\202\067\114\203\175
\001\001\060\102\060\100\006\010\053\006\001\005\005\007\002\001
\026\064\150\164\164\160\072\057\057\167\167\167\056\155\151\143


```
\162\157\163\157\146\164\056\143\157\155\057\160\153\151\157\160
\163\057\104\157\143\163\057\122\145\160\157\163\151\164\157\162
\171\056\150\164\155\000\060\012\006\010\052\206\110\316\075\004
\003\003\003\147\000\060\144\002\060\024\206\120\300\046\032\353
\352\241\024\167\072\133\337\143\071\245\063\307\120\100\325\153
\065\153\017\264\337\175\126\271\341\245\235\170\031\202\241\103
\156\032\327\130\243\125\003\102\333\002\060\030\224\264\036\072
\215\144\372\014\047\033\207\023\112\322\267\072\000\224\306\362
\345\143\277\257\343\372\334\223\325\347\106\232\153\201\151\076
\002\337\121\015\217\050\161\101\211\221\057
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Microsoft ECC TS Root Certificate Authority 2018"

Issuer: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

#

Serial Number:15:38:75:e1:64:7e:d1:b0:47:b4:ef:af:41:12:82:45

Subject: CN=Microsoft ECC TS Root Certificate Authority 2018,O=Microsoft Corporation,L=Redmond,ST=Washington,C=US

Not Valid Before: Tue Feb 27 20:51:34 2018

Not Valid After: Fri Feb 27 21:00:12 2043

Fingerprint (MD5): 37:94:29:58:86:2a:06:e6:bb:cf:d7:ab:59:c7:f2:3c

Fingerprint (SHA1): 31:f9:fc:8b:a3:80:59:86:b7:21:ea:72:95:c6:5b:3a:44:53:42:74

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Microsoft ECC TS Root Certificate Authority 2018"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\061\371\374\213\243\200\131\206\267\041\352\162\225\306\133\072
\104\123\102\164
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\067\224\051\130\206\052\006\346\273\317\327\253\131\307\362\074
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\127\141\163\150\151
\156\147\164\157\156\061\020\060\016\006\003\125\004\007\023\007
\122\145\144\155\157\156\144\061\036\060\034\006\003\125\004\012
\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160
\157\162\141\164\151\157\156\061\071\060\067\006\003\125\004\003
\023\060\115\151\143\162\157\163\157\146\164\040\105\103\103\040
```

```
\124\123\040\122\157\157\164\040\103\145\162\164\151\146\151\143  
\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060  
\061\070
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\025\070\165\341\144\176\321\260\107\264\357\257\101\022  
\202\105
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "GlobalSign Code Signing Root E45"

Issuer: CN=GlobalSign Code Signing Root E45,O=GlobalSign nv-sa,C=BE

#

Serial Number:76:53:fe:ae:18:26:43:6f:69:f5:1c:c2:77:16:f2:5e

Subject: CN=GlobalSign Code Signing Root E45,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 18 00:00:00 2020

Not Valid After: Sat Mar 18 00:00:00 2045

Fingerprint (MD5): 1c:65:05:d0:f3:fb:48:c5:29:e4:c4:3e:4d:f8:8d:22

Fingerprint (SHA1): 79:aa:50:5e:dd:09:b3:21:e3:6d:57:91:0a:5d:f5:a9:fb:85:cc:57

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Code Signing Root E45"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003  
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040  
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157  
\164\040\105\064\065
```

END

CKA_ID UTF8 "0"

CKA_ISSUER

MULTILINE_OCTAL

```
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061  
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154  
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003  
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040  
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157  
\164\040\105\064\065
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\256\030\046\103\157\151\365\034\302\167\026
\362\136

END

CKA_VALUE MULTILINE_OCTAL
\060\202\002\042\060\202\001\251\240\003\002\001\002\002\020\166
\123\376\256\030\046\103\157\151\365\034\302\167\026\362\136\060
\012\006\010\052\206\110\316\075\004\003\003\060\123\061\013\060
\011\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003
\125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040
\156\166\055\163\141\061\051\060\047\006\003\125\004\003\023\040
\107\154\157\142\141\154\123\151\147\156\040\103\157\144\145\040
\123\151\147\156\151\156\147\040\122\157\157\164\040\105\064\065
\060\036\027\015\062\060\060\063\061\070\060\060\060\060\060
\132\027\015\064\065\060\063\061\070\060\060\060\060\060\132
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157
\164\040\105\064\065\060\166\060\020\006\007\052\206\110\316\075
\002\001\006\005\053\201\004\000\042\003\142\000\004\166\031\155
\003\265\365\204\043\253\062\152\056\141\335\204\045\057\357\350
\171\047\211\203\303\203\165\363\266\170\152\010\155\242\255\041
\052\002\220\006\354\232\100\234\172\206\221\271\130\205\310\050
\232\056\013\367\342\166\251\337\262\275\251\303\351\051\031\171
\010\262\120\320\302\305\235\012\141\014\343\135\067\006\112\134
\376\204\275\300\200\204\372\113\125\043\340\342\076\243\102\060
\100\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001
\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\035\006\003\125\035\016\004\026\004\024\247\237\335
\323\124\315\333\370\154\277\046\154\016\344\327\133\157\200\314
\102\060\012\006\010\052\206\110\316\075\004\003\003\003\147\000
\060\144\002\060\154\214\126\266\305\067\256\055\220\053\170\355
\261\036\106\010\322\303\112\050\357\170\031\010\216\044\064\106
\117\207\161\141\137\251\021\112\157\062\253\034\321\122\173\252
\072\352\345\232\002\060\125\053\167\057\316\370\077\233\150\112
\332\327\250\113\105\015\176\262\153\366\154\332\261\025\342\274
\110\031\167\213\127\301\135\024\327\101\000\314\046\122\320\040
\270\031\117\226\347\232

END

CKA_NSS_MOZILLA_CA_POLICY
CK_BBOOL CK_FALSE
CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate
Trust for "GlobalSign Code Signing Root E45"

```

# Issuer: CN=GlobalSign
Code Signing Root E45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:ae:18:26:43:6f:69:f5:1c:c2:77:16:f2:5e
# Subject: CN=GlobalSign Code Signing Root E45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After: Sat Mar 18 00:00:00 2045
# Fingerprint (MD5): 1c:65:05:d0:f3:fb:48:c5:29:e4:c4:3e:4d:f8:8d:22
# Fingerprint (SHA1): 79:aa:50:5e:dd:09:b3:21:e3:6d:57:91:0a:5d:f5:a9:fb:85:cc:57
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Code Signing Root E45"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\171\252\120\136\335\011\263\041\343\155\127\221\012\135\365\251
\373\205\314\127
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\034\145\005\320\363\373\110\305\051\344\304\076\115\370\215\042
END
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157
\164\040\105\064\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\166\123\376\256\030\046\103\157\151\365\034\302\167\026
\362\136
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "GlobalSign Code Signing Root R45"
# Issuer: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:ac:75:46:48:93:f5:e5:d7:4a:48:3a:4e:f8
# Subject: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After: Sat Mar 18 00:00:00 2045
# Fingerprint (MD5): e9:4f:b5:48:71:20:8c:00:df:70:f7:08:ac:47:08:5b
#

```

Fingerprint (SHA1): 4e:fc:31:46:0c:61:9e:ca:e5:9c:1b:ce:2c:00:80:36:d9:4c:84:b8

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Code Signing Root R45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157
\164\040\122\064\065
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003
\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040
\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157
\164\040\122\064\065
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\166\123\376\254\165\106\110\223\365\345\327\112\110\072
\116\370
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\162\060\202\003\132\240\003\002\001\002\002\020\166
\123\376\254\165\106\110\223\365\345\327\112\110\072\116\370\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\123
\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060
\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151
\147\156\040\156\166\055\163\141\061\051\060\047\006\003\125\004
\003\023\040\107\154\157\142\141\154\123\151\147\156\040\103\157
\144\145\040\123\151\147\156\151\156\147\040\122\157\157\164\040
\122\064\065\060\036\027\015\062\060\060\063\061\070\060\060\060
\060\060\060\132\027\015\064\065\060\063\061\070\060\060\060\060
\060\060\132\060\123\061\013\060\011\006\003\125\004\006\023\002
\102\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157
\142\141\154\123\151\147\156\040\156\166\055\163\141\061\051\060
\047\006\003\125\004\003\023\040\107\154\157\142\141\154\123\151
\147\156\040\103\157\144\145\040\123\151\147\156\151\156\147\040
\122\157\157\164\040\122\064\065\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
\060\202\002\012\002\202\002\001\000\266\055\305\060\335\172\350
```

\253\220\075\003\162\260\072\113\231\026\141\262\345\377\245\147
\035\067\034\345\176\354\223\203\252\204\365\243\103\233\230\105
\212\270\143\127\135\233\000\210\004\045\351\370\150\222\113\202
\330\113\311\112\003\363\250\177\152\217\212\141\047\275\241\104
\320\375\365\077\042\302\243\117\221\215\263\005\262\050\202\221
\135\373\131\210\005\013\227\006\302\230\370\054\247\063\044\356
\120\072\101\314\360\240\260\173\035\115\322\250\130\070\226\351
\337\371\033\221\273\213\020\054\322\307\103\035\242\011\164\241
\200\257\173\346\063\012\014\131\153\216\274\364\253\132\227\173
\177\256\125\373\204\360\200\376\204\114\327\342\272\275\304\165
\241\157\275\141\020\164\104\262\230\007\342\164\253\377\150\334
\154\046\076\351\037\345\340\004\207\255\060\323\014\215\003\174
\125\270\026\160\134\044\170\040\045\353\147\147\210\253\272\116
\064\230\153\160\021\336\070\312\324\276\241\300\234\341\337\036
\002\001\330\073\341\147\103\204\266\317\374\164\267\057\204\243
\277\272\011\067\075\147\154\261\105\134\031\141\253\101\203\365
\254\035\353\167\015\106\107\163\316\277\275\225\225\355\235\053
\210\020\376\372\130\350\247\127\341\263\317\250\132\351\007\045
\233\022\304\236\200\162\075\223\334\214\224\337\073\104\346\046
\200\374\322\303\003\360\214\014\322\105\326\056\347\217\230\236
\346\004\356\102\156\147\176\102\026\161\142\347\004\371\140\306
\144\241\266\234\201\041\116\053\306\155\150\224\206\306\231\164
\163\147\061\172\221\362\324\214\171\156\174\246\273\176\106\157
\115\305\205\022\053\317\232\042\104\010\250\205\067\316\007\141
\127\006\027\022\044\300\304\061\163\241\230\065\127\107\176\020
\072\105\331\055\244\121\220\230\251\240\007\067\304\145\032\252
\034\153\026\167\367\247\227\354\077\031\060\231\157\061\373\352
\100\262\347\322\304\372\311\320\360\120\166\164\131\372\215\155
\027\062\276\370\351\176\003\364\347\207\165\232\324\112\221\054
\205\003\023\002\053\102\200\362\211\152\066\317\310\114\240\316
\236\370\313\215\255\026\247\323\336\325\233\030\247\306\222\072
\361\202\143\361\056\016\044\144\337\002\003\001\000\001\243\102
\060\100\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060\003
\001\001\377\060\035\006\003\125\035\016\004\026\004\024\037\000
\277\106\200\012\374\170\071\267\245\264\103\331\126\120\273\316
\226\073\060\015\006\011\052\206\110\206\367\015\001\001\014\005
\000\003\202\002\001\000\136\053\272\164\227\064\104\137\166\110
\050\100\204\223\356\001\156\351\241\263\326\200\045\346\173\344
\274\011\221\075\017\374\166\255\327\324\060\040\273\217\140\320
\221\326\034\362\234\357\170\032\053\224\062\002\301\044\226\122
\122\002\320\363\321\374\362\233\071\156\231\341\037\216\103\101
\175\232\036\133\311\135\232\204\374\046\346\207\363\164\162\046
\255\244\033\331\075\073\152\122\240\074\011\036\057\036\173\263
\063\264\105\307\367\254\261\257\223\140\255\166\256\270\262\025
\170\353\203\152\353\377\333\106\253\044\345\356\002\372\220\037
\131\300\057\135\326\267\135\244\134\020\267\162\123\370\101\116
\314\372\170\032\045\112\312\376\205\142\103\141\303\264\067\252

\201\322\364\326\072\017\275\215\131\176\060\107\336\053\153\347
\041\120\063\137\324\147\233\324\270\147\237\074\047\231\003\377
\205\103\216\163\022\312\040\315\350\141\325\261\146\334\027\326
\071\155\017\333\317\043\067\241\202\211\116\034\153\077\326\240
\315\252\007\235\076\102\046\252\327\014\356\372\107\277\032\122
\176\321\165\201\323\311\212\142\027\155\117\210\240\041\240\046
\076\257\155\331\142\060\037\351\230\050\256\156\215\325\216\114
\162\146\223\200\215\052\343\125\307\140\147\220\102\126\134\042
\121\017\263\334\116\071\356\115\335\331\035\170\020\124\073\156
\320\227\157\003\265\036\262\043\163\306\022\262\232\144\320\374
\225\205\044\250\377\337\241\260\334\221\100\256\337\011\063\253
\271\335\222\267\361\314\221\164\073\151\353\147\227\033\220\277
\347\307\240\157\161\273\127\277\267\217\132\355\172\100\152\026
\315\200\204\055\057\341\002\324\044\224\103\263\025\374\014\053
\033\375\161\157\374\313\274\165\027\072\136\203\322\311\263\057
\033\325\234\215\177\124\376\176\176\344\126\243\207\247\235\341
\131\122\224\101\217\155\133\276\206\225\232\377\032\166\335\100
\322\121\112\160\264\037\063\143\043\167\077\354\047\036\131\344
\010\207\355\064\202\112\017\077\376\240\035\301\365\147\163\105
\206\170\364\252\051\351\047\207\306\031\333\306\023\024\303\071
\111\207\115\240\227\340\145\023\365\235\167\126\351\332\263\130
\307\072\362\300\315\202

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER

CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "GlobalSign Code Signing Root R45"

Issuer: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE

Serial Number:76:53:fe:ac:75:46:48:93:f5:e5:d7:4a:48:3a:4e:f8

Subject: CN=GlobalSign Code Signing Root R45,O=GlobalSign nv-sa,C=BE

Not Valid Before: Wed Mar 18 00:00:00 2020

Not Valid After: Sat Mar 18 00:00:00 2045

Fingerprint (MD5): e9:4f:b5:48:71:20:8c:00:df:70:f7:08:ac:47:08:5b

Fingerprint (SHA1): 4e:fc:31:46:0c:61:9e:ca:e5:9c:1b:ce:2c:00:80:36:d9:4c:84:b8

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "GlobalSign Code Signing Root R45"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

\116\374\061\106\014\141\236\312\345\234\033\316\054\000\200\066
\331\114\204\270

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

\351\117\265\110\161\040\214\000\337\160\367\010\254\107\010\133

END

CKA_ISSUER MULTILINE_OCTAL

\060\123\061\013\060\011\006\003\125\004\006\023\002\102\105\061

\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154

\123\151\147\156\040\156\166\055\163\141\061\051\060\047\006\003

\125\004\003\023\040\107\154\157\142\141\154\123\151\147\156\040

\103\157\144\145\040\123\151\147\156\151\156\147\040\122\157\157

\164\040\122\064\065

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\166\123\376\254\165\106\110\223\365\345\327\112\110\072

\116\370

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "DigiCert CS ECC P384 Root G5"

Issuer: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US

Serial Number:03:69:8f:e7:12:d5:19:f3:ce:d0:fd:b7:b1:64:30:11

Subject: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US

Not Valid Before:

Fri Jan 15 00:00:00 2021

Not Valid After: Sun Jan 14 23:59:59 2046

Fingerprint (MD5): dd:b4:30:09:e8:67:1f:45:a0:80:ec:9d:d9:b1:a1:54

Fingerprint (SHA1): 84:35:73:11:2a:3b:31:93:44:e5:e4:ec:ab:c9:f2:6c:7c:d5:4d:07

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert CS ECC P384 Root G5"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145

\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004

\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105

\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145

\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004

\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\003\151\217\347\022\325\031\363\316\320\375\267\261\144
\060\021

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\026\060\202\001\235\240\003\002\001\002\002\020\003
\151\217\347\022\325\031\363\316\320\375\267\261\144\060\021\060
\012\006\010\052\206\110\316\075\004\003\003\060\115\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111
\156\143\056\061\045\060\043\006\003\125\004\003\023\034\104\151
\147\151\103\145\162\164\040\103\123\040\105\103\103\040\120\063
\070\064\040\122\157\157\164\040\107\065\060\036\027\015\062\061
\060\061\061\065\060\060\060\060\060\060\132\027\015\064\066\060
\061\061\064\062\063\065\071\065\071\132\060\115\061\013\060\011
\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125
\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111\156
\143\056\061\045\060\043\006\003\125\004\003\023\034\104\151\147
\151\103\145\162\164\040\103\123\040\105\103\103\040\120\063\070
\064\040\122\157\157\164\040\107\065\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\177\024\255\205\266\227\375\002\041\065\115\140\350\070\223
\223\233\075\005\020\155\257\323\376\357\372\273\373\163\231\363
\354\062\022\215\307\150\270\213\336\211\242\210\124\167\215\273
\041\176\063\225\126\226\011\350\325\214\241\004\270\233\156\031
\000\142\350\102\050\246\130\067\204\031\125\046\173\063\067\147
\362\232\162\255\241\256\256\000\102\074\034\176\270\172\236\041
\234\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024
\360\214\230\161\071\070\145\302\072\033\246\027\146\035\310\355
\145\336\222\066\060\016\006\003\125\035\017\001\001\377\004\004
\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005
\060\003\001\001\377\060\012\006\010\052\206\110\316\075\004\003
\003\003\147\000\060\144\002\060\043\157\341\000\031\046\120\344
\106\040\145\213\067\247\317\353\006\341\314\062\311\052\241\354
\062\015\163\242\036\002\034\065\141\052\116\151\253\071\167\355
\227\210\300\175\153\352\211\335\002\060\103\361\321\130\243\165
\076\206\233\266\125\021\213\027\367\075\376\012\151\305\177\116
\306\165\033\132\224\313\352\021\021\306\010\042\210\336\320\172
\242\245\171\350\343\041\247\315\023\263

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

```
# Microsoft Code Signing Only Certificate
# Trust for "DigiCert CS ECC P384 Root G5"
# Issuer: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Serial Number:03:69:8f:e7:12:d5:19:f3:ce:d0:fd:b7:b1:64:30:11
# Subject: CN=DigiCert CS ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59
2046
# Fingerprint (MD5): dd:b4:30:09:e8:67:1f:45:a0:80:ec:9d:d9:b1:a1:54
# Fingerprint (SHA1): 84:35:73:11:2a:3b:31:93:44:e5:e4:ec:ab:c9:f2:6c:7c:d5:4d:07
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert CS ECC P384 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\204\065\163\021\052\073\061\223\104\345\344\354\253\311\362\154
\174\325\115\007
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\335\264\060\011\350\147\037\105\240\200\354\235\331\261\241\124
END
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\103\123\040\105
\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\003\151\217\347\022\325\031\363\316\320\375\267\261\144
\060\021
END
CKA_TRUST_SERVER_AUTH
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "DigiCert CS RSA4096 Root G5"
# Issuer: CN=DigiCert CS RSA4096 Root G5,O=DigiCert\, Inc.,C=US
# Serial Number:06:ce:e1:31:be:6d:55:c8:07:f7:c0:c7:fb:44:e6:20
# Subject: CN=DigiCert CS RSA4096 Root G5,O=DigiCert\, Inc.,C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (MD5): a7:33:ed:bf:1b:5d:e1:19:c4:91:c9:4a:ea:f7:6d:c7
```

Fingerprint (SHA1): 5e:ee:d8:6f:a3:7c:67:52:30:64:2f:55:c8:4d:db:f6:7c:d3:3c:80

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert CS RSA4096 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT

MULTILINE_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
\123\101\064\060\071\066\040\122\157\157\164\040\107\065

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
\123\101\064\060\071\066\040\122\157\157\164\040\107\065

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\006\316\341\061\276\155\125\310\007\367\300\307\373\104
\346\040

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\144\060\202\003\114\240\003\002\001\002\002\020\006
\316\341\061\276\155\125\310\007\367\300\307\373\104\346\040\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\114
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164
\054\040\111\156\143\056\061\044\060\042\006\003\125\004\003\023
\033\104\151\147\151\103\145\162\164\040\103\123\040\122\123\101
\064\060\071\066\040\122\157\157\164\040\107\065\060\036\027\015
\062\061\060\061\061\065\060\060\060\060\060\060\132\027\015\064
\066\060\061\061\064\062\063\065\071\065\071\132\060\114\061\013
\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006
\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040
\111\156\143\056\061\044\060\042\006\003\125\004\003\023\033\104
\151\147\151\103\145\162\164\040\103\123\040\122\123\101\064\060
\071\066\040\122\157\157\164\040\107\065\060\202\002\042\060\015
\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002
\017\000\060\202\002\012\002\202\002\001\000\266\063\163\200\330
\142\003\160\024\054\021\034\071\136\174\256\174\203\206\035\376
\046\057\114\044\255\213\352\203\137\251\274\075\133\374\013\230
\114\002\107\060\354\342\376\354\350\064\133\146\136\277\073\327

\054\246\045\377\214\131\263\337\352\332\174\051\331\106\120\162
\010\035\156\321\033\012\335\037\315\231\211\372\017\017\163\304
\341\234\035\165\062\315\157\227\332\052\152\225\262\154\311\011
\320\352\013\173\175\027\006\111\231\357\326\336\340\310\123\324
\256\306\167\361\206\273\043\034\270\300\337\131\367\216\175\321
\357\202\346\046\213\132\070\265\377\165\325\262\331\117\011\363
\067\210\120\332\021\244\212\024\024\321\123\004\000\175\363\152
\104\030\376\120\160\062\007\034\250\232\016\072\035\305\012\037
\156\013\046\151\267\074\242\127\160\054\206\372\114\156\225\251
\130\103\271\254\022\326\377\077\355\327\103\027\153\114\316\236
\304\220\253\377\372\020\120\232\243\220\127\326\347\214\020\256
\237\026\032\317\065\035\177\327\166\355\212\234\065\247\050\270
\247\135\041\374\060\067\335\336\010\031\117\025\306\347\246\332
\220\107\216\367\224\123\114\216\123\002\276\375\231\345\352\206
\320\257\003\002\323\233\252\223\361\253\050\216\040\001\377\114
\373\314\267\051\100\365\207\244\022\023\005\037\103\156\327\121
\120\237\070\264\040\355\027\011\022\217\314\271\031\257\237\315
\276\151\021\323\257\125\020\155\027\206\171\226\122\306\262\000
\235\345\257\070\260\065\364\210\153\217\016\004\075\174\356\257
\315\323\152\020\112\306\315\206\312\042\075\241\112\134\373\016
\377\210\337\134\142\247\300\271\036\331\254\154\176\070\067\376
\167\223\045\302\205\212\117\265\067\006\132\006\201\024\361\316
\224\235\231\221\352\062\132\316\147\075\156\004\146\255\014\117
\055\243\056\367\236\365\170\235\367\012\375\176\217\343\102\212
\125\226\274\361\237\067\055\374\236\137\225\376\214\030\033\374
\216\375\113\220\257\327\003\150\022\143\254\342\223\247\242\313
\004\345\117\144\316\003\372\306\024\237\331\213\350\314\324\142
\214\153\344\000\054\031\237\032\006\306\061\201\124\373\123\044
\232\257\125\231\272\235\165\256\270\302\335\002\003\001\000\001
\243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\150
\001\223\261\322\112\100\102\151\224\106\054\034\132\210\251\045
\264\107\117\060\016\006\003\125\035\017\001\001\377\004\004\003
\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060
\003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001
\014\005\000\003\202\002\001\000\222\374\356\270\002\171\027\002
\121\175\041\305\111\147\247\244\361\250\044\070\353\014\150\352
\132\102\153\234\364\163\301\151\112\055\263\067\005\120\102\230
\222\236\006\171\054\056\006\231\366\357\337\053\240\315\263\222
\001\203\265\240\313\047\265\074\043\032\230\111\242\354\055\231
\245\131\103\254\322\261\223\326\127\327\034\274\223\326\306\100
\341\263\157\031\125\267\023\327\345\103\063\244\265\253\313\332
\301\061\144\015\164\326\054\355\303\215\156\353\273\257\031\107
\141\141\055\300\364\005\271\157\170\334\072\367\102\100\145\123
\221\275\231\015\223\222\124\246\251\067\131\053\233\313\231\306
\274\075\367\004\204\360\224\063\035\017\202\132\071\313\056\105
\303\050\031\243\262\233\230\310\374\061\153\140\217\366\351\206
\050\274\340\074\175\164\135\026\211\133\151\044\307\020\213\304
\113\273\066\117\324\131\077\303\260\244\221\231\370\056\321\112

```
\001\235\365\210\022\357\277\132\021\152\131\117\131\153\132\147
\363\217\264\023\017\300\330\057\075\050\162\252\031\177\021\175
\152\133\237\225\347\137\267\224\117\361\076\241\132\377\055\314
\235\337\047\167\217\062\163\034\147\012\166\363\372\134\261\277
\274\035\275\014\050\233\262\307\027\147\013\063\017\303\275\066
\334\373\272\102\013\253\355\204\303\142\326\204\026\251\261\007
\153\251\156\356\306\317\346\260\104\051\302\360\263\141\200\052
\213\157\322\024\134\045\207\124\144\363\244\114\301\241\370\247
\153\352\376\352\072\374\171\333\016\217\334\306\363\311\324\154
\336\351\203\241\216\035\042\354\311\072\262\000\173\334\073\247
\102\032\177\334\213\251\021\075\216\247\300\040\157\135\011\135
\103\104\346\217\146\314\251\133\007\361\357\233\172\016\263\124
\341\224\375\016\054\306\223\327\125\375\161\230\065\270\011\112
\377\306\051\050\054\366\122\055\333\024\030\222\047\342\026\176
\214\312\324\141\276\202\207\221\353\230\067\077\277\137\135\167
\077\064\254\033\070\103\253\150\162\231\062\036\072\032\031\245
\243\070\114\043\327\243\347\314\325\052\222\027\220\013\132\113
\275\026\275\373\206\152\342\211\231\354\344\240\125\030\311\243
\010\037\023\340\062\010\162\320
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "DigiCert CS RSA4096 Root G5"

Issuer: CN=DigiCert CS RSA4096 Root G5,O=DigiCert, Inc.,C=US

Serial Number:06:ce:e1:31:be:6d:55:c8:07:f7:c0:c7:fb:44:e6:20

Subject: CN=DigiCert CS RSA4096 Root G5,O=DigiCert, Inc.,C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After: Sun Jan 14 23:59:59 2046

Fingerprint (MD5): a7:33:ed:bf:1b:5d:e1:19:c4:91:c9:4a:ea:f7:6d:c7

#

Fingerprint (SHA1): 5e:ee:d8:6f:a3:7c:67:52:30:64:2f:55:c8:4d:db:f6:7c:d3:3c:80

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert CS RSA4096 Root G5"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\136\356\330\157\243\174\147\122\060\144\057\125\310\115\333\366
\174\323\074\200
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\247\063\355\277\033\135\341\031\304\221\311\112\352\367\155\307
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\114\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\044\060\042\006\003\125\004
\003\023\033\104\151\147\151\103\145\162\164\040\103\123\040\122
\123\101\064\060\071\066\040\122\157\157\164\040\107\065
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

```
\002\020\006\316\341\061\276\155\125\310\007\367\300\307\373\104
\346\040
```

END

CKA_TRUST_SERVER_AUTH

CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "DigiCert RSA4096 Root G5"

Issuer: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US

Serial Number:08:bf:a2:6f:9a:3f:33:65:a2:ac:f0:a6:38:c4:01:70

Subject: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After: Sun Jan 14 23:59:59 2046

Fingerprint (MD5): 26:18:9c:6e:60:22:79:b6:8d:0f:65:4c:99:17:56:12

Fingerprint (SHA1): 87:b8:e6:d3:8f:1a:39:cd:97:f0:4a:9e:17:4b:3c:9e:e7:ee:11:15

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert RSA4096 Root G5"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

```
\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064
\060\071\066\040\122\157\157\164\040\107\065
```

END

CKA_ID

UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

```
\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064
\060\071\066\040\122\157\157\164\040\107\065
```

END

CKA_SERIAL_NUMBER MULTILINE_OCTAL

\002\020\010\277\242\157\232\077\063\145\242\254\360\246\070\304
\001\160

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\136\060\202\003\106\240\003\002\001\002\002\020\010
\277\242\157\232\077\063\145\242\254\360\246\070\304\001\160\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\111
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060
\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164
\054\040\111\156\143\056\061\041\060\037\006\003\125\004\003\023
\030\104\151\147\151\103\145\162\164\040\122\123\101\064\060\071
\066\040\122\157\157\164\040\107\065\060\036\027\015\062\061\060
\061\061\065\060\060\060\060\060\060\132\027\015\064\066\060\061
\061\064\062\063\065\071\065\071\132\060\111\061\013\060\011\006
\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004
\012\023\016\104\151\147\151\103\145\162\164\054\040\111\156\143
\056\061\041\060\037\006\003\125\004\003\023\030\104\151\147\151
\103\145\162\164\040\122\123\101\064\060\071\066\040\122\157\157
\164\040\107\065\060\202\002\042\060\015\006\011\052\206\110\206
\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012
\002\202\002\001\000\252\276\015\262\006\175\046\371\107\352\344
\033\347\102\151\270\231\302\271\356\044\261\106\220\313\131\044
\122\124\065\246\044\302\137\221\031\310\266\102\326\363\107\145
\225\144\347\205\145\147\251\256\174\000\117\340\170\003\120\255
\363\177\216\270\021\347\201\142\261\213\337\362\111\046\011\336
\017\026\274\332\050\233\241\310\227\057\223\220\332\040\052\343
\204\324\377\251\236\260\055\277\264\000\336\233\037\310\240\143
\123\150\205\157\115\205\306\252\143\371\215\262\065\166\142\164
\003\334\223\230\150\005\236\315\220\145\335\322\172\061\253\044
\055\155\100\056\220\077\143\154\054\353\372\036\200\124\215\171
\002\220\024\263\265\117\116\365\210\004\103\200\303\110\263\046
\057\254\121\225\062\125\045\057\101\226\260\126\241\010\073\334
\230\037\162\205\054\167\312\230\314\070\373\216\162\311\155\354
\005\354\355\115\267\074\133\024\120\205\335\227\373\131\367\220
\022\364\023\277\203\115\200\262\025\145\021\227\140\345\326\134
\346\004\265\120\346\161\063\266\040\223\251\150\000\070\316\111
\333\264\134\073\162\327\105\134\124\277\315\074\001\043\036\174
\326\370\151\054\245\000\012\154\062\110\264\336\160\055\072\023
\027\301\177\144\313\363\060\355\241\075\226\147\361\224\265\140
\154\133\151\150\365\202\063\011\242\266\331\363\205\262\156\240
\224\360\302\304\175\241\054\312\163\365\256\340\122\234\242\146
\346\003\316\352\337\355\030\324\271\143\213\367\350\377\373\263
\133\217\103\305\257\267\164\224\120\065\145\256\326\057\361\205
\217\123\241\160\364\215\062\135\274\226\303\036\302\004\004\234
\004\017\263\135\176\211\040\312\136\047\015\211\112\022\043\264
\366\304\335\330\037\370\150\263\066\370\036\274\306\367\204\266
\350\212\116\210\060\070\300\046\330\160\012\011\072\064\016\153
\202\022\226\034\057\346\236\255\330\161\065\201\261\214\006\156

\364\156\146\377\113\112\256\275\360\376\327\134\137\123\273\062
\074\315\142\321\024\240\051\037\020\336\251\162\117\261\255\144
\345\203\052\217\213\352\204\225\356\230\045\230\232\263\161\074
\301\247\120\362\254\102\142\061\302\241\220\306\356\342\267\212
\250\265\266\033\073\002\003\001\000\001\243\102\060\100\060\035
\006\003\125\035\016\004\026\004\024\142\155\267\221\117\304\352
\243\142\140\217\240\320\276\265\217\006\174\150\000\060\016\006
\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017\006
\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015
\006\011\052\206\110\206\367\015\001\001\014\005\000\003\202\002
\001\000\141\350\373\047\155\326\342\270\263\011\257\252\360\261
\202\114\376\075\027\211\115\055\025\235\373\356\320\273\204\354
\204\165\333\103\023\336\214\237\307\051\357\207\164\313\023\160
\201\126\000\164\374\256\364\331\072\336\042\010\121\245\240\134
\202\146\266\173\114\251\332\217\253\254\034\101\226\146\326\235
\336\126\346\277\116\261\262\136\137\300\303\156\324\302\204\220
\365\175\261\272\026\321\051\212\310\235\351\317\320\307\031\073
\077\317\356\367\341\063\256\102\310\230\300\010\236\363\132\363
\337\324\053\073\216\250\050\126\031\307\116\167\074\045\124\334
\270\110\110\321\371\047\152\076\354\023\257\262\005\211\375\125
\137\363\175\216\015\234\011\135\054\212\176\205\316\370\341\277
\021\075\062\214\132\327\176\075\364\063\130\317\242\005\230\243
\263\373\316\211\277\375\302\026\335\156\334\210\111\015\013\240
\003\377\347\105\351\004\301\351\375\252\235\165\370\270\037\207
\203\331\353\071\323\132\247\313\230\254\023\211\000\374\157\225
\116\341\175\021\106\155\366\070\106\243\023\240\054\001\365\142
\317\277\034\120\221\047\164\135\267\354\107\174\320\321\165\313
\173\356\321\115\043\012\303\140\245\167\055\200\332\147\017\216
\153\166\007\360\246\017\352\204\256\036\171\277\010\212\332\011
\363\364\356\265\066\363\324\172\103\272\224\065\341\372\301\073
\033\226\231\244\127\143\353\265\250\202\367\255\370\167\327\166
\206\363\166\123\126\133\374\046\102\204\316\237\203\221\221\257
\364\276\160\025\200\245\330\350\151\261\330\221\124\270\031\262
\142\371\242\372\125\355\004\277\271\104\206\344\317\361\233\000
\277\021\017\276\265\164\044\121\377\167\064\143\354\110\043\016
\350\021\353\167\155\332\312\202\221\276\244\204\223\114\332\241
\376\314\006\204\350\041\350\124\272\346\323\035\143\075\302\132
\374\346\311\203\236\162\144\251\206\131\000\214\302\367\023\203
\266\320\244\061\306\254\221\216\173\244\042\126\023\306\165\307
\043\274\213\133\374\106\075\376\135\122\051\257\257\350\311\303
\166\113\350\253\107\002\362\232\015\323\054\210\200\007\206\300
\143\017\002\114\216\004\123\166\271\130\102\157\174\051\160\135
\277\047

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE


```
# Microsoft Code Signing Only Certificate
# Trust for "DigiCert RSA4096 Root G5"
# Issuer: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US
# Serial Number:08:bf:a2:6f:9a:3f:33:65:a2:ac:f0:a6:38:c4:01:70
# Subject: CN=DigiCert RSA4096 Root G5,O=DigiCert\, Inc.,C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (MD5): 26:18:9c:6e:60:22:79:b6:8d:0f:65:4c:99:17:56:12
# Fingerprint (SHA1): 87:b8:e6:d3:8f:1a:39:cd:97:f0:4a:9e:17:4b:3c:9e:e7:ee:11:15
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert RSA4096 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\207\270\346\323\217\032\071\315\227\360\112\236\027\113\074\236
\347\356\021\025
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\030\234\156\140\042\171\266\215\017\145\114\231\027\126\022
END
CKA_ISSUER MULTILINE_OCTAL
\060\111\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\041\060\037\006\003\125\004
\003\023\030\104\151\147\151\103\145\162\164\040\122\123\101\064
\060\071\066\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\010\277\242\157\232\077\063\145\242\254\360\246\070\304
\001\160
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Microsoft Code Signing Only Certificate
# Certificate "DigiCert ECC P384 Root G5"
# Issuer: CN=DigiCert ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Serial Number:0d:f3:d9:37:65:a3:79:c5:95:66:ea:92:e2:24:4f:34
# Subject: CN=DigiCert ECC P384 Root G5,O=DigiCert\, Inc.,C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (MD5): 11:7f:85:ae:47:1f:51:61:6e:06:94:1e:6a:43:08:0b
```

Fingerprint (SHA1): d1:ee:b1:e8:c0:90:20:ba:b8:5d:3d:e2:7f:78:ee:33:a0:6c:ae:db

```
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert ECC P384 Root G5"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040
\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_ID
UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040
\120\063\070\064\040\122\157\157\164\040\107\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\015\363\331\067\145\243\171\305\225\146\352\222\342\044
\117\064
END
CKA_VALUE MULTILINE_OCTAL
\060\202\002\021\060\202\001\227\240\003\002\001\002\002\020\015
\363\331\067\145\243\171\305\225\146\352\222\342\044\117\064\060
\012\006\010\052\206\110\316\075\004\003\003\060\112\061\013\060
\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003
\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111
\156\143\056\061\042\060\040\006\003\125\004\003\023\031\104\151
\147\151\103\145\162\164\040\105\103\103\040\120\063\070\064\040
\122\157\157\164\040\107\065\060\036\027\015\062\061\060\061\061
\065\060\060\060\060\060\060\132\027\015\064\066\060\061\061\064
\062\063\065\071\065\071\132\060\112\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023
\016\104\151\147\151\103\145\162\164\054\040\111\156\143\056\061
\042\060\040\006\003\125\004\003\023\031\104\151\147\151\103\145
\162\164\040\105\103\103\040\120\063\070\064\040\122\157\157\164
\040\107\065\060\166\060\020\006\007\052\206\110\316\075\002\001
\006\005\053\201\004\000\042\003\142\000\004\374\131\037\316\231
\154\177\233\016\266\051\143\157\306\205\363\012\323\326\233\256
\127\025\114\016\355\135\343\011\176\155\052\243\206\252\272\170
\240\247\161\275\104\372\010\300\112\006\326\157\335\054\112\070
\164\345\320\275\377\172\377\345\071\116\275\275\027\036\037\103
```

```
\255\325\274\047\330\113\277\166\214\060\062\244\373\371\123\345
\330\252\070\123\135\250\240\067\240\147\012\243\102\060\100\060
\035\006\003\125\035\016\004\026\004\024\222\226\367\346\272\325
\021\272\371\042\056\173\176\132\331\360\045\345\005\033\060\016
\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017
\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060
\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060\145
\002\061\000\375\300\115\361\244\247\333\247\014\046\021\364\111
\275\007\070\143\053\104\142\006\171\010\307\303\324\317\233\076
\253\072\047\252\220\307\375\131\242\270\062\122\333\312\216\027
\013\012\220\002\060\135\032\354\121\211\324\144\334\371\345\036
\070\275\133\056\343\345\104\344\073\030\172\327\360\225\100\217
\362\353\317\364\371\320\145\242\101\362\260\346\174\301\066\054
\217\136\071\335\067
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only

Certificate

Trust for "DigiCert ECC P384 Root G5"

Issuer: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US

Serial Number:0d:f3:d9:37:65:a3:79:c5:95:66:ea:92:e2:24:4f:34

Subject: CN=DigiCert ECC P384 Root G5,O=DigiCert, Inc.,C=US

Not Valid Before: Fri Jan 15 00:00:00 2021

Not Valid After: Sun Jan 14 23:59:59 2046

Fingerprint (MD5): 11:7f:85:ae:47:1f:51:61:6e:06:94:1e:6a:43:08:0b

Fingerprint (SHA1): d1:ee:b1:e8:c0:90:20:ba:b8:5d:3d:e2:7f:78:ee:33:a0:6c:ae:db

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "DigiCert ECC P384 Root G5"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\321\356\261\350\300\220\040\272\270\135\075\342\177\170\356\063
\240\154\256\333
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\021\177\205\256\107\037\121\141\156\006\224\036\152\103\010\013
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\042\060\040\006\003\125\004
\003\023\031\104\151\147\151\103\145\162\164\040\105\103\103\040
\120\063\070\064\040\122\157\157\164\040\107\065
```

```

END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\015\363\331\067\145\243\171\305\225\146\352\222\342\044
\117\064
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "HARICA Code Signing RSA Root CA 2021"
# Issuer: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Serial Number: 15:c2:ae:2a:4d:99:9a:63:8c:d3:ba:13:19:76:08:f5
# Subject: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Not Valid Before: Fri Feb 19 10:59:54 2021
# Not Valid After: Mon Feb 13
10:59:53 2045
# Fingerprint (MD5): 00:5d:c9:e3:b2:c0:90:e0:61:9a:42:c0:29:a1:6b:ba
# Fingerprint (SHA1): 8d:de:b8:20:46:b6:22:7c:79:24:6a:3e:ad:7b:32:c3:e8:8f:fc:ac
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Code Signing RSA Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040

```

\103\101\040\062\060\062\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\025\302\256\052\115\231\232\143\214\323\272\023\031\166
\010\365

END

CKA_VALUE MULTILINE_OCTAL

\060\202\005\266\060\202\003\236\240\003\002\001\002\002\020\025
\302\256\052\115\231\232\143\214\323\272\023\031\166\010\365\060
\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\165
\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060
\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143
\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145
\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151
\157\156\163\040\103\101\061\055\060\053\006\003\125\004\003\014
\044\110\101\122\111\103\101\040\103\157\144\145\040\123\151\147
\156\151\156\147\040\122\123\101\040\122\157\157\164\040\103\101
\040\062\060\062\061\060\036\027\015\062\061\060\062\061\071\061
\060\065\071\065\064\132\027\015\064\065\060\062\061\063\061\060
\065\071\065\063\132\060\165\061\013\060\011\006\003\125\004\006
\023\002\107\122\061\067\060\065\006\003\125\004\012\014\056\110
\145\154\154\145\156\151\143\040\101\143\141\144\145\155\151\143
\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111\156
\163\164\151\164\165\164\151\157\156\163\040\103\101\061\055\060
\053\006\003\125\004\003\014\044\110\101\122\111\103\101\040\103
\157\144\145\040\123\151\147\156\151\156\147\040\122\123\101\040
\122\157\157\164\040\103\101\040\062\060\062\061\060\202\002\042
\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003
\202\002\017\000\060\202\002\012\002\202\002\001\000\212\152\356
\252\012\043\125\014\213\006\102\343\225\133\124\170\137\305\216
\006\054\174\074\061\276\257\015\251\241\354\112\040\130\005\235
\342\150\262\273\353\137\177\052\063\271\362\125\234\157\252\244
\036\355\020\276\203\051\021\066\346\236\077\372\155\173\121\341
\325\167\245\275\313\151\016\073\042\040\224\014\061\145\100\015
\011\257\020\065\172\233\352\171\010\104\244\213\147\251\053\115
\301\347\320\327\247\366\265\072\215\331\243\251\171\270\244\145
\134\274\363\076\367\237\231\366\270\303\145\150\055\253\203\056
\335\205\231\004\251\365\321\134\325\121\102\001\271\237\101\265
\113\042\262\000\364\313\147\020\357\151\304\020\255\372\224\006
\166\120\022\127\202\256\305\024\255\074\175\273\235\361\163\341
\174\360\256\161\336\133\367\022\335\367\200\361\334\076\361\140
\272\311\031\227\157\165\164\205\114\375\071\103\303\144\156\064
\254\023\301\034\145\266\122\102\361\106\353\057\372\135\246\317
\016\111\235\367\164\174\170\015\006\072\054\022\373\342\113\046
\344\157\213\041\201\063\102\071\023\350\102\253\133\125\324\033
\273\067\266\022\221\367\363\175\274\322\377\354\261\303\325\240
\314\262\053\307\217\135\176\114\122\102\110\373\217\375\132\220

\163\020\325\251\162\124\215\111\333\070\122\252\106\110\016\057
\372\000\054\314\163\014\066\113\044\316\023\154\246\244\244\243
\326\174\233\351\070\013\306\044\333\115\254\147\041\111\133\101
\067\144\346\140\153\037\355\052\057\140\031\060\036\330\074\234
\031\103\207\337\300\012\364\344\312\140\210\172\326\243\271\344
\045\056\171\342\376\301\313\074\267\367\317\116\130\114\373\303
\255\253\175\252\312\210\373\016\070\015\037\236\134\071\353\270
\007\304\120\042\115\370\205\177\156\354\214\372\266\161\115\336
\175\226\151\304\335\076\036\336\046\220\012\054\115\025\225\251
\242\076\334\075\016\167\174\215\101\050\117\270\203\121\276\076
\267\217\220\072\160\061\211\132\372\223\123\374\140\311\215\165
\220\356\132\057\035\204\237\000\251\346\303\206\043\242\036\335
\022\343\241\106\140\033\147\277\120\025\042\222\174\112\264\214
\217\156\234\225\302\054\334\073\072\040\266\274\213\002\003\001
\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377
\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026
\004\024\264\144\026\110\350\374\132\113\063\051\211\353\231\100
\271\040\264\366\141\032\060\016\006\003\125\035\017\001\001\377
\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367\015
\001\001\013\005\000\003\202\002\001\000\053\254\131\213\346\071
\104\334\373\255\112\210\340\144\377\253\303\362\322\316\160\057
\003\345\157\262\304\365\066\326\123\153\207\253\035\213\231\007
\310\060\216\107\162\375\241\270\165\326\027\241\026\275\144\163
\221\060\127\255\175\375\005\100\206\223\321\111\226\262\013\324
\174\144\023\213\323\041\111\070\273\373\350\314\076\061\361\256
\173\114\052\337\202\006\243\216\005\204\234\177\160\316\300\273
\105\027\337\135\145\014\344\120\110\007\104\213\244\057\126\332
\306\172\366\140\215\244\070\361\235\207\026\060\262\360\137\172
\102\125\040\161\317\314\356\000\261\022\107\277\102\271\344\263
\265\035\031\204\271\230\155\340\151\264\025\101\265\342\120\110
\307\037\352\232\267\171\221\335\325\325\123\031\374\256\030\154
\151\333\255\131\050\233\144\230\247\074\307\125\216\321\060\000
\317\324\062\236\142\261\303\052\356\065\042\306\273\360\174\273
\203\270\000\211\365\334\032\227\331\070\232\051\123\141\031\246
\247\364\073\107\375\335\147\225\017\216\244\146\054\202\232\267
\055\161\346\337\256\370\370\150\301\273\017\352\120\240\105\227
\267\032\225\022\157\310\263\266\005\150\332\152\036\016\065\205
\204\254\164\014\212\264\364\165\237\042\257\260\124\273\266\236
\042\371\331\353\325\212\015\307\334\370\230\061\137\236\372\306
\227\364\101\020\165\323\201\266\061\137\172\335\210\205\010\257
\160\107\002\067\173\342\112\354\135\362\335\051\022\104\310\212
\252\335\322\125\170\027\165\257\161\151\015\167\160\112\260\037
\177\102\333\307\161\334\130\326\030\275\120\305\271\162\004\307
\147\173\174\123\140\312\111\030\025\274\100\163\256\053\250\053
\254\157\021\104\071\354\202\110\176\021\312\373\326\077\266\300
\271\270\006\223\165\275\223\047\167\027\015\134\245\236\352\301
\133\000\055\014\250\065\140\307\342\157\065\033\075\166\265\347
\255\335\164\043\117\206\262\107\357\310\057\320\205\174\071\226

```
\067\241\053\051\002\275\076\207\317\250\366\035\165\062\317\070
\343\163\261\356\020\201\265\052\261\210\006\121\036\132\072\110
\121\363\066\131\142\337\102\146\131\120\267\130\276\365\166\100
\232\022\026\346\016\252\327\154\240\325
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "HARICA Code Signing RSA Root CA 2021"

Issuer: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR

Serial Number: 15:c2:ae:2a:4d:99:9a:63:8c:d3:ba:13:19:76:08:f5

Subject: CN=HARICA Code Signing RSA Root CA 2021,O=Hellenic
Academic and Research Institutions CA,C=GR

Not Valid Before: Fri Feb 19 10:59:54 2021

Not Valid After: Mon Feb 13 10:59:53 2045

Fingerprint (MD5): 00:5d:c9:e3:b2:c0:90:e0:61:9a:42:c0:29:a1:6b:ba

Fingerprint (SHA1): 8d:de:b8:20:46:b6:22:7c:79:24:6a:3e:ad:7b:32:c3:e8:8f:fc:ac

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "HARICA Code Signing RSA Root CA 2021"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\215\336\270\040\106\266\042\174\171\044\152\076\255\173\062\303
\350\217\374\254
```

END

CKA_CERT_MD5_HASH MULTILINE_OCTAL

```
\000\135\311\343\262\300\220\340\141\232\102\300\051\241\153\272
```

END

CKA_ISSUER MULTILINE_OCTAL

```
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\123\101\040\122\157\157\164\040
\103\101\040\062\060\062\061
```

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

```
\002\020\025\302\256\052\115\231\232\143\214\323\272\023\031\166
\010\365
```

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Certificate "HARICA Code Signing ECC Root CA 2021"

Issuer: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR

Serial Number:4c:8a:63:1d:a9:63:8f:05:a2:fb:76:14:ff:5b:a2:cd

Subject: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR

Not Valid Before: Fri Feb 19 11:04:36 2021

Not Valid After: Mon Feb 13 11:04:35

2045

Fingerprint (MD5): 9d:dd:7d:39:b4:1c:95:fa:82:e0:c3:11:38:ba:69:84

Fingerprint (SHA1): e4:36:e5:37:b7:13:42:b6:2e:8e:00:30:5a:d9:a3:d1:d7:33:47:e9

CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "HARICA Code Signing ECC Root CA 2021"

CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509

CKA_SUBJECT MULTILINE_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040
\103\101\040\062\060\062\061

END

CKA_ID UTF8 "0"

CKA_ISSUER MULTILINE_OCTAL

\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040
\103\101\040\062\060\062\061

END

CKA_SERIAL_NUMBER

MULTILINE_OCTAL

\002\020\114\212\143\035\251\143\217\005\242\373\166\024\377\133
\242\315

END

CKA_VALUE MULTILINE_OCTAL

\060\202\002\146\060\202\001\355\240\003\002\001\002\002\020\114
\212\143\035\251\143\217\005\242\373\166\024\377\133\242\315\060
\012\006\010\052\206\110\316\075\004\003\003\060\165\061\013\060
\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003
\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143
\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141
\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163
\040\103\101\061\055\060\053\006\003\125\004\003\014\044\110\101
\122\111\103\101\040\103\157\144\145\040\123\151\147\156\151\156
\147\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060
\062\061\060\036\027\015\062\061\060\062\061\071\061\061\060\064
\063\066\132\027\015\064\065\060\062\061\063\061\061\060\064\063
\065\132\060\165\061\013\060\011\006\003\125\004\006\023\002\107
\122\061\067\060\065\006\003\125\004\012\014\056\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\101\061\055\060\053\006\003
\125\004\003\014\044\110\101\122\111\103\101\040\103\157\144\145
\040\123\151\147\156\151\156\147\040\105\103\103\040\122\157\157
\164\040\103\101\040\062\060\062\061\060\166\060\020\006\007\052
\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000
\004\103\237\274\134\102\152\103\341\254\113\270\016\137\200\006
\343\005\167\213\177\013\171\327\141\240\220\277\362\123\050\243
\130\272\224\300\146\152\034\131\332\200\130\201\000\114\274\311
\171\230\020\014\307\035\013\343\223\334\205\071\150\331\277\247
\103\322\061\314\202\202\047\272\210\321\322\055\126\067\367\072
\332\156\071\334\161\020\145\356\070\013\207\172\003\272\060\137
\144\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004
\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004
\024\152\161\301\163\152\223\102\246\227\162\136\273\220\137\202
\222\017\053\326\353\060\016\006\003\125\035\017\001\001\377\004
\004\003\002\001\206\060\012\006\010\052\206\110\316\075\004\003
\003\003\147\000\060\144\002\060\036\245\325\013\104\225\020\344
\147\174\116\205\136\271\105\111\002\163\260\262\034\263\247\042
\321\000\141\100\017\263\207\067\026\215\000\355\266\213\125\045
\006\224\220\334\327\347\165\237\002\060\177\164\153\361\112\337
\360\367\204\173\362\305\171\060\003\110\362\036\040\042\127\144
\124\127\064\200\167\267\077\043\117\264\365\200\230\302\301\126
\133\240\347\326\241\217\365\014\157\035

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

```

# Trust for "HARICA Code Signing ECC Root CA 2021"
# Issuer: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Serial Number:4c:8a:63:1d:a9:63:8f:05:a2:fb:76:14:ff:5b:a2:cd
# Subject: CN=HARICA Code Signing ECC Root CA 2021,O=Hellenic Academic and Research Institutions
CA,C=GR
# Not Valid Before: Fri Feb 19 11:04:36 2021
# Not Valid After: Mon Feb 13 11:04:35 2045
# Fingerprint (MD5): 9d:dd:7d:39:b4:1c:95:fa:82:e0:c3:11:38:ba:69:84
# Fingerprint (SHA1): e4:36:e5:37:b7:13:42:b6:2e:8e:00:30:5a:d9:a3:d1:d7:33:47:e9
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA Code
Signing ECC Root CA 2021"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\344\066\345\067\267\023\102\266\056\216\000\060\132\331\243\321
\327\063\107\351
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\235\335\175\071\264\034\225\372\202\340\303\021\070\272\151\204
END
CKA_ISSUER MULTILINE_OCTAL
\060\165\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\055\060\053\006\003\125\004
\003\014\044\110\101\122\111\103\101\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\105\103\103\040\122\157\157\164\040
\103\101\040\062\060\062\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\114\212\143\035\251\143\217\005\242\373\166\024\377\133
\242\315
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING
CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

# Microsoft Code Signing Only Certificate
# Certificate "Microsoft Identity Verification Root Certificate Authority 2020"
# Issuer: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US
# Serial Number:54:98:d2:d1:d4:5b:19:95:48:13:79:c8:11:c0:87:99
# Subject: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US

```

```
# Not Valid Before: Thu Apr 16 18:36:16 2020
# Not Valid After: Sun Apr 16 18:44:40 2045
# Fingerprint (MD5): be:95:4f:16:01:21:22:44:8c:a8:bc:27:96:02:ac:f5
# Fingerprint (SHA1): f4:00:42:e2:e5:f7:e8:ef:81:89:fe:d1:55:19:ae:ce:42:c3:bf:a2
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Identity Verification Root Certificate Authority 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT
MULTILINE_OCTAL
\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\062\060
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\062\060
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\124\230\322\321\324\133\031\225\110\023\171\310\021\300
\207\231
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\314\060\202\003\264\240\003\002\001\002\002\020\124
\230\322\321\324\133\031\225\110\023\171\310\021\300\207\231\060
\015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\167
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036\060
\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146
\164\040\103\157\162\160\157\162\141\164\151\157\156\061\110\060
\106\006\003\125\004\003\023\077\115\151\143\162\157\163\157\146
\164\040\111\144\145\156\164\151\164\171\040\126\145\162\151\146
\151\143\141\164\151\157\156\040\122\157\157\164\040\103\145\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
```

\164\171\040\062\060\062\060\060\036\027\015\062\060\060\064\061
\066\061\070\063\066\061\066\132\027\015\064\065\060\064\061\066
\061\070\064\064\064\060\132\060\167\061\013\060\011\006\003\125
\004\006\023\002\125\123\061\036\060\034\006\003\125\004\012\023
\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157
\162\141\164\151\157\156\061\110\060\106\006\003\125\004\003\023
\077\115\151\143\162\157\163\157\146\164\040\111\144\145\156\164
\151\164\171\040\126\145\162\151\146\151\143\141\164\151\157\156
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\145\040\101\165\164\150\157\162\151\164\171\040\062\060\062\060
\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001
\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001
\000\263\221\052\007\203\006\147\375\236\235\340\307\300\267\244
\346\102\004\177\017\246\333\137\373\325\132\327\105\240\373\167
\013\360\200\363\246\155\132\115\171\123\330\240\206\204\127\105
\040\307\242\124\373\307\242\277\212\307\156\065\363\242\025\304
\057\116\343\112\205\226\111\015\377\276\231\330\024\366\274\047
\007\356\102\233\053\365\013\222\006\344\375\151\023\145\250\221
\162\362\230\204\353\203\075\016\344\327\161\022\110\041\313\015
\355\366\107\111\267\233\371\311\307\027\266\204\117\377\270\254
\232\327\163\147\111\205\343\206\275\067\100\320\045\206\324\336
\265\302\155\142\152\325\251\170\274\055\157\111\371\345\154\024
\024\375\024\307\323\145\026\067\336\313\156\274\136\051\215\375
\142\233\025\054\326\005\346\271\211\062\063\243\142\307\327\326
\122\147\010\304\056\364\126\053\236\013\207\314\354\247\264\246
\252\353\005\315\031\127\245\072\013\004\047\034\221\147\236\055
\142\055\057\036\276\332\300\040\313\004\031\312\063\373\211\276
\230\342\162\240\162\065\276\171\341\234\203\157\344\155\027\157
\220\363\075\000\206\165\070\216\320\340\111\232\273\333\323\370
\060\312\325\127\210\150\115\162\323\277\155\177\161\330\375\275
\015\256\222\144\110\267\133\157\171\046\265\315\233\225\041\204
\321\357\017\062\075\173\127\214\363\105\007\114\174\340\136\030
\016\065\166\213\155\236\313\066\164\253\005\370\340\163\135\062
\126\224\147\227\045\012\306\065\075\224\227\347\301\104\213\200
\375\301\370\364\164\031\345\060\366\006\373\041\127\076\006\034
\213\153\025\206\047\111\173\202\223\312\131\350\165\107\350\077
\070\364\307\123\171\240\266\264\342\134\121\357\275\137\070\301
\023\346\170\014\225\132\056\305\100\131\050\314\017\044\300\354
\272\011\167\043\231\070\246\266\034\332\307\272\040\266\327\067
\330\177\067\257\010\343\073\161\333\156\163\033\175\231\162\260
\344\206\063\131\164\265\026\000\173\120\155\306\206\023\332\375
\304\071\202\075\044\000\232\140\332\272\224\300\005\121\054\064
\254\120\231\023\207\273\263\005\200\262\115\060\002\134\270\046
\203\135\264\143\163\357\256\043\225\117\140\050\276\067\325\133
\245\002\003\001\000\001\243\124\060\122\060\016\006\003\125\035
\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035
\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125
\035\016\004\026\004\024\310\176\322\152\205\052\033\312\031\230

\004\007\047\317\120\020\117\150\250\242\060\020\006\011\053\006
\001\004\001\202\067\025\001\004\003\002\001\000\060\015\006\011
\052\206\110\206\367\015\001\001\014\005\000\003\202\002\001\000
\257\152\335\346\031\347\055\224\103\031\116\313\351\120\225\144
\245\003\221\002\213\342\066\200\073\025\242\122\302\026\031\266
\152\132\135\164\103\060\364\233\377\140\164\011\261\041\036\220
\026\155\305\044\217\134\146\210\143\364\117\314\175\362\022\114
\100\020\213\001\237\332\251\310\256\362\225\033\317\235\005\353
\111\076\164\240\150\133\345\126\054\145\034\202\176\123\332\126
\331\106\027\171\222\105\304\020\066\010\122\051\027\313\057\246
\362\176\324\151\044\212\036\217\260\163\015\314\034\112\253\262
\252\355\247\221\143\001\144\042\250\062\270\176\062\050\263\147
\163\055\221\264\334\061\001\013\367\107\012\246\361\327\112\355
\126\140\304\054\010\243\173\100\260\274\164\047\122\207\326\276
\210\335\067\212\211\156\147\210\035\365\311\135\240\376\266\253
\072\200\327\032\227\074\027\066\042\101\036\254\115\325\203\346
\074\070\275\117\060\351\124\251\323\266\004\303\062\166\141\273
\260\030\305\053\030\263\300\200\325\267\225\260\136\121\115\042
\374\354\130\252\350\330\224\264\245\056\355\222\336\347\030\174
\041\127\335\125\143\367\277\155\315\037\322\246\167\050\160\307
\342\133\072\133\010\322\133\116\310\000\226\263\341\203\066\257
\206\012\145\134\164\366\352\354\172\152\164\240\360\113\356\357
\224\243\254\120\362\207\355\327\072\060\203\311\373\175\127\276
\345\343\370\101\312\345\144\256\263\243\354\130\354\205\232\314
\357\271\352\363\126\030\271\134\163\232\257\305\167\027\203\131
\333\067\032\030\162\124\245\101\322\266\043\165\243\103\232\345
\167\174\226\171\267\101\215\277\354\334\200\240\237\321\167\165
\130\137\065\023\340\045\032\147\013\175\316\045\372\007\012\344
\141\041\330\324\034\345\007\306\066\231\364\226\320\306\025\376
\116\315\327\256\213\235\333\026\375\004\306\222\275\324\210\346
\251\243\252\273\367\144\070\073\137\314\014\320\065\276\164\031
\003\246\305\252\114\242\141\066\202\076\035\363\053\274\227\135
\333\113\170\073\055\365\073\357\140\043\350\365\354\013\043\066
\225\257\230\146\277\123\323\173\270\151\112\052\226\146\151\304
\224\306\364\137\156\254\230\170\210\200\006\134\242\262\355\242

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Microsoft Identity Verification Root Certificate Authority 2020"

Issuer: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US

Serial Number:54:98:d2:d1:d4:5b:19:95:48:13:79:c8:11:c0:87:99

Subject: CN=Microsoft Identity Verification Root Certificate Authority 2020,O=Microsoft Corporation,C=US

Not Valid Before: Thu Apr 16 18:36:16 2020

Not Valid After: Sun Apr 16 18:44:40 2045

```

# Fingerprint (MD5): be:95:4f:16:01:21:22:44:8c:a8:bc:27:96:02:ac:f5
# Fingerprint (SHA1): f4:00:42:e2:e5:f7:e8:ef:81:89:fe:d1:55:19:ae:ce:42:c3:bf:a2
CKA_CLASS
CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft Identity Verification Root Certificate Authority 2020"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\364\000\102\342\345\367\350\357\201\211\376\321\125\031\256\316
\102\303\277\242
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\276\225\117\026\001\041\042\104\214\250\274\047\226\002\254\365
END
CKA_ISSUER MULTILINE_OCTAL
\060\167\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061
\110\060\106\006\003\125\004\003\023\077\115\151\143\162\157\163
\157\146\164\040\111\144\145\156\164\151\164\171\040\126\145\162
\151\146\151\143\141\164\151\157\156\040\122\157\157\164\040\103
\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157
\162\151\164\171\040\062\060\062\060
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\020\124\230\322\321\324\133\031\225\110\023\171\310\021\300
\207\231
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE

```

```

# Microsoft Code Signing Only Certificate
# Certificate "Entrust Code Signing Root Certification Authority - CSBR1"
# Issuer: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust\, Inc.,C=US
# Serial Number:7f:f1:a8:f9:f4:3a:e8:87:6e:2d:c6:ff:5e:43:3d:b2:ee:30:a6:43
# Subject: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust\, Inc.,C=US
# Not Valid Before: Fri May 07 13:26:36 2021
# Not Valid After: Sun Dec 30 13:26:36 2040
# Fingerprint (MD5): 3a:07:e2:0b:54:91:63:95:fd:01:e5:7b:71:aa:46:be
# Fingerprint (SHA1): 89:74:24:05:3a:4a:88:7a:c0:98:38:02:91:03:4d:88:5c:87:14:b9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL
CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE

```

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Code Signing Root Certification Authority - CSBR1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\014\015\105\156\164\162\165\163
\164\054\040\111\156\143\056\061\102\060\100\006\003\125\004\003
\014\071\105\156\164\162\165\163\164\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\055\040\103\123\102\122\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\014\015\105\156\164\162\165\163
\164\054\040\111\156\143\056\061\102\060\100\006\003\125\004\003
\014\071\105\156\164\162\165\163\164\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\055\040\103\123\102\122\061
END
CKA_SERIAL_NUMBER
MULTILINE_OCTAL
\002\024\177\361\250\371\364\072\350\207\156\055\306\377\136\103
\075\262\356\060\246\103
END
CKA_VALUE MULTILINE_OCTAL
\060\202\005\242\060\202\003\212\240\003\002\001\002\002\024\177
\361\250\371\364\072\350\207\156\055\306\377\136\103\075\262\356
\060\246\103\060\015\006\011\052\206\110\206\367\015\001\001\015
\005\000\060\151\061\013\060\011\006\003\125\004\006\023\002\125
\123\061\026\060\024\006\003\125\004\012\014\015\105\156\164\162
\165\163\164\054\040\111\156\143\056\061\102\060\100\006\003\125
\004\003\014\071\105\156\164\162\165\163\164\040\103\157\144\145
\040\123\151\147\156\151\156\147\040\122\157\157\164\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171\040\055\040\103\123\102\122\061\060\036\027
\015\062\061\060\065\060\067\061\063\062\066\063\066\132\027\015
\064\060\061\062\063\060\061\063\062\066\063\066\132\060\151\061
\013\060\011\006\003\125\004\006\023\002\125\123\061\026\060\024
\006\003\125\004\012\014\015\105\156\164\162\165\163\164\054\040
\111\156\143\056\061\102\060\100\006\003\125\004\003\014\071\105
\156\164\162\165\163\164\040\103\157\144\145\040\123\151\147\156
\151\156\147\040\122\157\157\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\055\040\103\123\102\122\061\060\202\002\042\060\015\006\011
\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000
```

\060\202\002\012\002\202\002\001\000\247\201\217\367\024\105\266
\142\103\362\330\256\323\045\136\110\117\121\277\305\175\237\120
\034\065\321\326\176\141\052\224\031\155\047\106\244\246\032\135
\367\124\121\152\200\042\306\250\146\165\115\124\203\311\136\150
\033\253\366\133\144\260\255\255\040\275\124\357\106\153\155\002
\347\105\256\165\366\216\212\271\062\056\213\270\167\034\122\115
\171\210\137\245\072\030\311\120\054\227\047\055\277\332\000\175
\143\177\357\062\354\106\207\143\333\232\237\303\132\041\066\173
\371\233\325\312\240\156\162\054\374\341\361\236\160\115\010\126
\025\157\220\253\373\110\272\271\327\301\202\170\205\145\056\177
\265\311\300\342\024\267\067\021\101\006\342\212\340\250\366\345
\176\266\170\005\001\303\140\355\117\007\101\056\012\023\111\343
\220\233\177\335\275\372\254\277\144\121\321\134\233\264\365\134
\347\134\377\073\233\245\240\032\327\175\011\262\302\267\377\156
\034\274\310\175\346\351\053\374\162\263\024\351\112\125\022\204
\234\104\045\165\035\366\052\360\117\245\040\075\150\045\353\141
\227\174\017\345\266\075\363\256\303\301\021\274\033\216\314\340
\107\060\136\102\000\206\161\343\130\254\006\312\145\037\173\224
\246\113\127\147\014\176\136\255\170\147\133\125\343\136\353\307
\330\354\114\156\206\313\363\334\370\237\207\252\162\130\022\017
\175\246\370\370\102\071\073\074\054\344\062\115\111\214\340\341
\000\302\070\240\234\372\204\076\101\334\156\126\256\306\032\133
\364\147\150\005\001\315\033\277\256\207\274\235\123\366\056\350
\266\153\344\231\336\305\117\207\130\250\322\145\036\310\037\325
\162\156\356\131\034\127\073\011\162\235\327\312\267\220\306\315
\173\105\222\221\102\003\114\175\077\312\362\252\270\302\016\206
\363\020\237\106\056\244\146\206\150\132\150\030\160\051\070\021
\200\140\153\212\103\243\163\154\343\263\153\067\377\346\235\147
\001\222\206\337\057\110\321\373\120\140\325\134\376\041\323\001
\102\143\376\357\160\264\027\300\217\250\356\323\301\113\137\022
\352\375\375\056\016\207\104\140\343\251\364\302\030\243\343\375
\316\014\204\042\015\363\247\170\332\223\363\333\070\317\271\057
\063\306\377\007\074\136\276\105\323\002\003\001\000\001\243\102
\060\100\060\035\006\003\125\035\016\004\026\004\024\202\272\326
\075\227\316\237\317\161\350\222\067\257\375\263\265\151\065\127
\317\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001
\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002
\001\206\060\015\006\011\052\206\110\206\367\015\001\001\015\005
\000\003\202\002\001\000\022\357\070\241\210\341\241\243\326\145
\334\107\234\363\274\334\317\254\113\214\074\032\276\053\364\367
\320\147\027\150\206\115\160\250\362\315\320\061\002\127\175\251
\014\212\073\127\071\236\360\156\367\044\042\005\147\321\301\226
\301\276\321\360\370\126\147\013\336\272\327\210\233\215\327\153
\010\166\365\130\221\331\265\303\100\123\032\244\361\205\315\077
\000\116\077\116\223\073\170\271\322\007\122\144\014\206\151\155
\350\124\145\126\027\350\000\123\204\212\363\333\373\263\316\013
\125\142\217\315\114\111\006\070\177\122\303\363\034\327\075\367
\063\312\062\255\301\251\257\157\353\021\313\356\254\121\277\260


```
\046\232\172\116\043\264\112\366\151\264\102\151\326\240\215\266
\214\107\112\073\040\067\267\101\007\357\057\040\330\146\034\151
\227\250\154\060\174\167\103\136\153\276\046\230\203\017\072\326
\307\160\052\026\106\055\045\124\206\143\145\127\102\367\043\101
\351\120\152\007\103\316\116\265\351\037\150\330\330\326\011\112
\250\350\262\374\220\147\222\344\220\046\363\107\372\326\040\373
\211\200\342\104\163\071\367\212\206\063\013\370\252\251\347\115
\354\334\157\325\317\061\115\253\216\037\220\100\326\174\134\202
\017\256\027\122\161\351\254\347\115\070\355\052\330\166\171\207
\255\027\243\114\253\267\102\127\277\006\254\345\320\115\060\351
\125\117\343\105\312\363\340\152\041\064\215\307\237\034\243\143
\110\222\322\226\007\276\245\107\076\302\052\231\070\247\216\332
\041\174\121\155\334\313\075\007\351\251\275\111\324\135\065\137
\133\214\004\121\352\232\130\220\272\033\257\150\170\261\026\017
\224\051\073\217\233\052\217\311\040\360\161\102\114\134\115\253
\061\214\253\351\177\046\150\151\240\245\026\015\201\304\321\005
\014\303\207\146\345\007\143\252\033\116\377\262\007\101\117\245
\042\106\120\254\146\000\207\122\154\074\262\073\234\227\241\106
\264\133\336\317\302\152\131\125\007\214\243\244\321\167\065\147
\106\004\057\331\070\271\106\257\272\216\033\162\046\002\057\166
\124\357\203\302\057\054\167\160\314\167\020\222\252\003\255\312
\314\340\117\351\203\106\345\263\074\031\157\172\171\207\266\070
\232\275\102\316\244\142
```

END

CKA_NSS_MOZILLA_CA_POLICY

CK_BBOOL CK_FALSE

CKA_NSS_SERVER_DISTRICT_AFTER CK_BBOOL CK_FALSE

CKA_NSS_EMAIL_DISTRICT_AFTER CK_BBOOL CK_FALSE

Microsoft Code Signing Only Certificate

Trust for "Entrust Code Signing Root Certification Authority - CSBR1"

Issuer: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust\, Inc.,C=US

Serial Number:7f:f1:a8:f9:f4:3a:e8:87:6e:2d:c6:ff:5e:43:3d:b2:ee:30:a6:43

Subject: CN=Entrust Code Signing Root Certification Authority - CSBR1,O=Entrust\, Inc.,C=US

Not Valid Before: Fri May 07 13:26:36 2021

Not Valid After: Sun Dec 30 13:26:36 2040

Fingerprint (MD5): 3a:07:e2:0b:54:91:63:95:fd:01:e5:7b:71:aa:46:be

Fingerprint (SHA1): 89:74:24:05:3a:4a:88:7a:c0:98:38:02:91:03:4d:88:5c:87:14:b9

CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST

CKA_TOKEN CK_BBOOL CK_TRUE

CKA_PRIVATE

CK_BBOOL CK_FALSE

CKA_MODIFIABLE CK_BBOOL CK_FALSE

CKA_LABEL UTF8 "Entrust Code Signing Root Certification Authority - CSBR1"

CKA_CERT_SHA1_HASH MULTILINE_OCTAL

```
\211\164\044\005\072\112\210\172\300\230\070\002\221\003\115\210
```

```
\134\207\024\271
```

END

```
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\072\007\342\013\124\221\143\225\375\001\345\173\161\252\106\276
END
CKA_ISSUER MULTILINE_OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\026\060\024\006\003\125\004\012\014\015\105\156\164\162\165\163
\164\054\040\111\156\143\056\061\102\060\100\006\003\125\004\003
\014\071\105\156\164\162\165\163\164\040\103\157\144\145\040\123
\151\147\156\151\156\147\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162
\151\164\171\040\055\040\103\123\102\122\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\177\361\250\371\364\072\350\207\156\055\306\377\136\103
\075\262\356\060\246\103
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION
CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

Found in path(s):

```
* /opt/cola/permits/1828010211_1697890214.5470614/0/ca-certificates-2023.2.60_v7.0.306-72.el7_9.src.rpm-cosi-
expand-archive-byEyruxa/certdata.txt
```

No license file was found, but licenses were detected in source scan.

```
/* This Source Code Form is subject to the terms of the Mozilla Public
* License, v. 2.0. If a copy of the MPL was not distributed with this
* file, You can obtain one at http://mozilla.org/MPL/2.0/. */
```

Found in path(s):

```
* /opt/cola/permits/1828010211_1697890214.5470614/0/ca-certificates-2023.2.60_v7.0.306-72.el7_9.src.rpm-cosi-
expand-archive-byEyruxa/nssckbi.h
```

No license file was found, but licenses were detected in source scan.

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```

Found in path(s):

* /opt/cola/permits/1828010211_1697890214.5470614/0/ca-certificates-2023.2.60_v7.0.306-72.el7_9.src.rpm-cosi-expand-archive-byEyruxa/certdata2pem.py

1.452 nss-softokn 3.90.0-6.el7_9

1.452.1 Available under license :

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* `configure.ac`, `Makefile.am`: The original versions were derived from the ones in the XML Catalog Manager project, version 2.2.

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* `atf-c/ui.c`: The `format_paragraph` and `format_text` functions were derived from the ones in the Monotone project, revision 3a0982da308228d796df35f98d787c5cff2bb5b6.

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* `atf-c++/detail/io.hpp`, `atf-c++/detail/io.cpp`, `atf-c++/detail/io_test.cpp`: These files were derived from the `file_handle`, `systembuf`, `pipe` and `pistream` classes and tests found in the Boost.Process library.

Author: Julio Merino <jmmv84@gmail.com>

* admin/check-style.sh,
admin/check-style-common.awk,
admin/check-style-cpp.awk, admin/check-style-shell.awk: These files,
except the first one, were first implemented in the Buildtool project.
They were later adapted to be part of Boost.Process and, during that
process, the shell script was created.

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xmlns:xsl="http://www.w3.org/1999/XSL/Transform"

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<xsl:param name="text"/>

<xsl:value-of select="\$isc.copyright.leader"/>

<xsl:value-of select="normalize-space(substring-before(\$text, '
'))"/>

<xsl:text>
</xsl:text>

<xsl:variable name="rest" select="substring-after(\$text, '
')"/>

<xsl:if test="translate(\$rest, '	 ', '')">

<xsl:call-template name="isc.copyright.format">

<xsl:with-param name="text" select="\$rest"/>

</xsl:call-template>

</xsl:if>

</xsl:template>

<xsl:variable name="isc.copyright.text">

<xsl:text>

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</xsl:text>

</xsl:variable>

<xsl:variable name="isc.copyright">

<xsl:call-template name="isc.copyright.format">

<xsl:with-param name="text">

<xsl:for-each select="book/info/copyright | refentry/docinfo/copyright">

```

<xsl:text>Copyright (C) </xsl:text>
<xsl:call-template name="copyright.years">
  <xsl:with-param name="years" select="year"/>
</xsl:call-template>
<xsl:text> </xsl:text>
<xsl:value-of select="holder"/>
  <xsl:value-of select="$isc.copyright.breakline"/>
<xsl:text>#10;</xsl:text>
</xsl:for-each>
<xsl:value-of
select="$isc.copyright.text"/>
  </xsl:with-param>
</xsl:call-template>
</xsl:variable>
</xsl:stylesheet>

<!--
- Local variables:
- mode: sgml
- End:
-->
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```

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1.454 nspr 4.35.0-1.el7_9

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* org.eclipse.jetty.orbit:javax.security.auth.message

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* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

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* javax.servlet:javax.servlet-api

- * javax.annotation:javax.annotation-api
- * javax.transaction:javax.transaction-api
- * javax.websocket:javax.websocket-api

Oracle OpenJDK

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- * java.sun.security.ssl

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<http://openjdk.java.net/legal/gplv2+ce.html>

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- org.ow2.asm:asm

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- org.mortbay.jasper:apache-jsp
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- org.apache.tomcat:tomcat-juli

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org.eclipse.jetty.toolchain:jetty-schemas

Assorted

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org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-api
org.apache.tomcat:tomcat-util-scan
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Eclipse

The following artifacts are EPL.

* org.eclipse.jetty.orbit:org.eclipse.jdt.core

The following artifacts are EPL and ASL2.

* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.

* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

* javax.servlet:javax.servlet-api

* javax.annotation:javax.annotation-api

* javax.transaction:javax.transaction-api

* javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

org.ow2.asm:asm-commons

org.ow2.asm:asm

Apache

The following artifacts are ASL2 licensed.

org.apache.taglibs:taglibs-standard-spec
org.apache.taglibs:taglibs-standard-impl

MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp
org.apache.tomcat:tomcat-jasper
org.apache.tomcat:tomcat-juli
org.apache.tomcat:tomcat-jsp-api
org.apache.tomcat:tomcat-el-api
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-api
org.apache.tomcat:tomcat-util-scan
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-el-api

Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville. Permission to use, copy, modify and distribute UnixCrypt for non-commercial or commercial purposes and without fee is granted provided that the copyright notice appears in all copies.

1.458 jetty 9.4.53.v20231009

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* org.eclipse.jetty.orbit:org.eclipse.jdt.core

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* org.eclipse.jetty.orbit:javax.security.auth.message

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* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.
<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

* javax.servlet:javax.servlet-api

- * javax.annotation:javax.annotation-api
- * javax.transaction:javax.transaction-api
- * javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- * java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

The following artifacts are licensed by the OW2 Foundation according to the terms of <http://asm.ow2.org/license.html>

- org.ow2.asm:asm-commons
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Apache

The following artifacts are ASL2 licensed.

- org.apache.taglibs:taglibs-standard-spec
- org.apache.taglibs:taglibs-standard-impl

MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

- org.mortbay.jasper:apache-jsp
- org.apache.tomcat:tomcat-jasper
- org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api
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org.apache.tomcat:tomcat-api
org.apache.tomcat:tomcat-util-scan
org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el
org.apache.tomcat:tomcat-jasper-el
org.apache.tomcat:tomcat-el-api

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The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville. Permission to use, copy, modify and distribute UnixCrypt for non-commercial or commercial purposes and without fee is granted provided that the copyright notice appears in all copies.

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* `configure.ac`, `Makefile.am`: The original versions were derived from the ones in the XML Catalog Manager project, version 2.2.

Author: Julio Merino <jmmv@users.sourceforge.net>

* `atf-c/ui.c`: The `format_paragraph` and `format_text` functions were derived from the ones in the Monotone project, revision 3a0982da308228d796df35f98d787c5cff2bb5b6.

Author: Julio Merino <jmmv@NetBSD.org>

* atf-c++/detail/io.hpp, atf-c++/detail/io.cpp, atf-c++/detail/io_test.cpp:
These files were derived from the file_handle, systembuf, pipe and pistream
classes and tests found in the Boost.Process library.

Author: Julio Merino <jmmv84@gmail.com>

* admin/check-style.sh,
admin/check-style-common.awk,
admin/check-style-cpp.awk, admin/check-style-shell.awk: These files,
except the first one, were first implemented in the Buildtool project.
They were later adapted to be part of Boost.Process and, during that
process, the shell script was created.

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<xsl:stylesheet version="1.0"

xmlns:xsl="http://www.w3.org/1999/XSL/Transform"

xmlns:xi="http://www.w3.org/2001/XInclude"

xmlns:db="http://docbook.org/ns/docbook">

<xsl:template name="isc.copyright.format">

<xsl:param name="text"/>

<xsl:value-of select="\$isc.copyright.leader"/>

<xsl:value-of select="normalize-space(substring-before(\$text, '
'))"/>

<xsl:text>
</xsl:text>

<xsl:variable name="rest" select="substring-after(\$text, '
')"/>

<xsl:if test="translate(\$rest, '	 ', '')">

<xsl:call-template name="isc.copyright.format">

<xsl:with-param name="text" select="\$rest"/>

</xsl:call-template>

</xsl:if>

</xsl:template>

<xsl:variable name="isc.copyright.text">

<xsl:text>

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```
</xsl:text>
</xsl:variable>

<xsl:variable name="isc.copyright">
  <xsl:call-template name="isc.copyright.format">
    <xsl:with-param name="text">
      <xsl:for-each select="book/info/copyright | refentry/docinfo/copyright">
        <xsl:text>Copyright (C) </xsl:text>
        <xsl:call-template name="copyright.years">
          <xsl:with-param name="years" select="year"/>
        </xsl:call-template>
        <xsl:text> </xsl:text>
        <xsl:value-of select="holder"/>
        <xsl:value-of select="$isc.copyright.breakline"/>
        <xsl:text>&#10;</xsl:text>
      </xsl:for-each>
      <xsl:value-of
select="$isc.copyright.text"/>
    </xsl:with-param>
  </xsl:call-template>
</xsl:variable>
</xsl:stylesheet>
```

<!--

- Local variables:
- mode: sgml
- End:

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Ajay Joshi <jaj@google.com>

Balzs Dn <balazs.dan@gmail.com>

Benoit Sigoure <tsuna@google.com>

Bharat Mediratta <bharat@menalto.com>

Bogdan Pilocca <boo@google.com>

Chandler Carruth <chandlerc@google.com>

Chris Prince <cprince@google.com>

Chris Taylor <taylorc@google.com>

Dan Egnor <egnor@google.com>

Dave MacLachlan <dmaclach@gmail.com>

David Anderson <danderson@google.com>

Dean Sturtevant

Eric Roman <eroman@chromium.org>

Gene Volovich <gv@cite.com>

Hady Zalek <hady.zalek@gmail.com>

Hal Burch <gmock@hburch.com>

Jeffrey Yasskin <jyasskin@google.com>

Jim Keller <jimkeller@google.com>

Joe Walnes <joe@truemesh.com>

Jon Wray <jwray@google.com>

Ji Sigursson <joi@google.com>
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Mark Paskin
Markus Heule <markus.heule@gmail.com>
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* org.eclipse.jetty.orbit:javax.security.auth.message

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* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

The following artifacts are CDDL + GPLv2 with classpath exception.
<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

* javax.servlet:javax.servlet-api
* javax.annotation:javax.annotation-api
* javax.transaction:javax.transaction-api
* javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

* java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

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org.ow2.asm:asm-commons

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org.apache.taglibs:taglibs-standard-spec

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org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper

org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api

org.apache.tomcat:tomcat-el-api

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-api

org.apache.tomcat:tomcat-util-scan

org.apache.tomcat:tomcat-util

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org.apache.tomcat:tomcat-el-api

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org.eclipse.jetty.toolchain:jetty-schemas

Assorted

The UnixCrypt.java code implements the one way cryptography used by Unix systems for simple password protection. Copyright 1996 Aki Yoshida, modified April 2001 by Iris Van den Broeke, Daniel Deville.

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1.464 jetty 9.4.53.v20231009

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org.apache.taglibs:taglibs-standard-impl

MortBay

The following artifacts are ASL2 licensed. Based on selected classes from following Apache Tomcat jars, all ASL2 licensed.

org.mortbay.jasper:apache-jsp

org.apache.tomcat:tomcat-jasper

org.apache.tomcat:tomcat-juli

org.apache.tomcat:tomcat-jsp-api

org.apache.tomcat:tomcat-el-api

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-api

org.apache.tomcat:tomcat-util-scan

org.apache.tomcat:tomcat-util

org.mortbay.jasper:apache-el

org.apache.tomcat:tomcat-jasper-el

org.apache.tomcat:tomcat-el-api

Mortbay

The following artifacts are CDDL + GPLv2 with classpath exception.

<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

org.eclipse.jetty.toolchain:jetty-schemas

Assorted

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1.465 jetty-security 9.4.53.v20231009

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Eclipse

The following artifacts are EPL.
* org.eclipse.jetty.orbit:org.eclipse.jdt.core

The following artifacts are EPL and ASL2.
* org.eclipse.jetty.orbit:javax.security.auth.message

The following artifacts are EPL and CDDL 1.0.
* org.eclipse.jetty.orbit:javax.mail.glassfish

Oracle

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

- * javax.servlet:javax.servlet-api
- * javax.annotation:javax.annotation-api
- * javax.transaction:javax.transaction-api
- * javax.websocket:javax.websocket-api

Oracle OpenJDK

If ALPN is used to negotiate HTTP/2 connections, then the following artifacts may be included in the distribution or downloaded when ALPN module is selected.

- * java.sun.security.ssl

These artifacts replace/modify OpenJDK classes. The modifications are hosted at github and both modified and original are under GPL v2 with classpath exceptions.

<http://openjdk.java.net/legal/gplv2+ce.html>

OW2

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org.ow2.asm:asm-commons
org.ow2.asm:asm

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org.apache.taglibs:taglibs-standard-spec
org.apache.taglibs:taglibs-standard-impl

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org.apache.tomcat:tomcat-juli
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org.apache.tomcat:tomcat-el-api

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<https://glassfish.dev.java.net/nonav/public/CDDL+GPL.html>

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